Down to Earth

Issue 128 August 2024 • ISSN 0969-3408

Up to date geo-news and views from around the world - just for you!

Down to Earth
'Earth science learning for all'

The learning zone

Great geo-adventures in 2024/5 begin here...

The North face of Ben Nevis, the UK's highest mountain and close to Fort William. (Image: Lochaber Geopark)

For 2024, we are still able to accept additional people onto our trips to Fort William and the Yorkshire Dales in October.

Our 2025 programme is now complete and places are filling up fast. We have now added Scarborough on the Yorkshire Coast, Heart of Wales, Western Lake District, Mull and Ardnamurchan and our Peak District Summer School. South Devon completes the Autumn line up.

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- The Yorkshire Dales, October 21-26

2025
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- Scarborough, Yorkshire Coast June 1-6
- Mull & Ardnamurchan, June 11-18
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- Heart of Wales, July 9-16
- Peak District Summer School, August 9-16
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August 2024
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We welcome your contributions, which should be with us no later than October 15th 2024 for the November issue.

If you would like to advertise with us, please ask for a media pack.

cover story

Is this the highest Triassic cliff in the UK? It's Penarth Head on the coast of South Wales. The rocks comprise mudstones and thin limestones of the Mercia Mudstone group. They were formed in a lacustrine environment with periodic evaporation.

The white material on the beach is the mineral Alabaster, something which is quite common hereabouts.

(Image: Chris Darmon)

editorial

Learning with mum and dad, observing families in a museum...

I don't often get the chance to tackle an in-depth look at a museum gallery on my own, particularly during one of our field trips. So when the opportunity to do just that at the National Museum of Wales in Cardiff, I grabbed it with both hands.

By way of background the National Museum of Wales is housed in a splendid building, next to the University, in a smart part of the city and only a short walk from Cathays railway station. In keeping with its status as a national museum, there is no admission charge.

The only impediment to an open entry was the obligatory bag search which was carried out by the security staff swiftly and efficiently in a friendly and informal way. Bag search out of the way we were free to go wherever we wished. After a splendid coffee, it was time to 'hit the galleries', beginning with 'The evolution of Wales'.

This is the largest permanent exhibition that has ever been mounted by the Museum and covers more than a 1000 square metres of floorspace. It begins with the 'big bang' some 4.5 billion years ago and takes us through the subsequent geological history of Wales, through time and space. It ends with the human impact on the landscape of today, particularly in the South Wales coalfield.

I'm always interested to see how geology in presented in a major exhibition such as this. Galleries completed in very recent times major on big screens and computer graphics. But this gallery is a little older and so less reliant on the latest technology. Instead it uses the museum's greatest asset to the full - the splendid local (and sometimes worldwide) specimens it has at its disposal.

So whether it's moon rock, a meteorite or a supersized trilobite that must have been on steroids, there are always real specimens on hand to help to tell the story. But hang on, aren't specimens of rocks, minerals and fossils supposed to be boring? With the exception of dinosaurs, specimens have been all but banished from many a museum!

My observations of lots of people, especially several family groups who were also going around the gallery, would gladden the heart of the traditional geologist. Far from skipping past the specimens, the mums and dads were heard to be carefully explaining them to their offspring, "Do you remember seeing one of these at the Wren's Nest in Dudley" said one mum to her son and daughter. She was referring to the 'Dudley Bug' trilobites of Silurian of the West Midlands.

And it wasn't confined to fossils, one dad was excitedly talking all things gold in front of a small display of the Welsh precious metal. I'm quite sure that a number of these children would remember their encounter with real geological specimens, long after they had forgotten a flashy computer display!

The National Museum of Wales are to be congratulated on this excellent and comprehensive exhibition. My only criticism, a few of the lights in display cases could have been better and some of the bulbs needed replacing. As for the specimens, they were splendid and did their job superbly well!

Chris Darmon, Editor

news up front

A digest of some of the latest Earth Science news from around the world.

Offshore wind - HM Government in major partnership with The Crown Estate...

During the recent General election, the Labour Party made a lot of it's intention of creating a publicly owned energy company, dubbed GB Energy. It would be created to "reduce the UK's over reliance on fossil fuels".

When challenged during the election campaign as to what exactly GB Energy would do, Ed Milliband, was less forthcoming. Now, with the announcement of a major partnership with monarch's Crown Estates Company, it becomes much clearer.

The Crown Estate is the owner of the majority of the seabed around our coasts which stretches out up to 12 nautical miles. In the deal, Crown Estates will lease some of that land on which vast wind farms can be built.

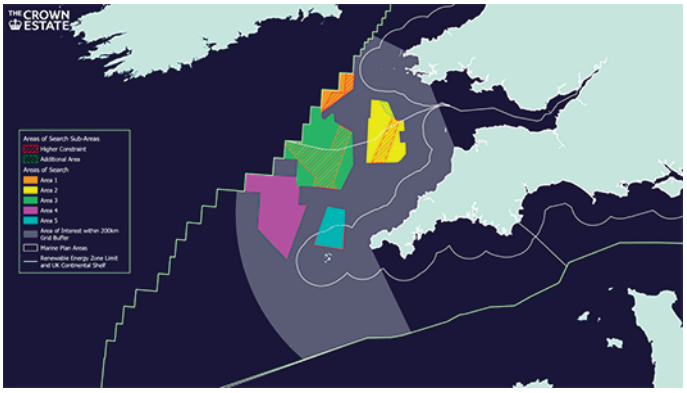
This could become a more familiar sight around the coast of England and Wales
(Image: Crown Estate/Jason Hawkes)

Ed Milliband, the Energy Security and Net Zero Secretary claimed investments in wind farms as well as other renewables such as solar energy is "going to lead to lower bills over the parliament". But the Conservative opposition maintains that GB Energy is "nothing but a gimmick that will end up costing families".

With the King, Charles III known to be a keen advocate of green energy, the Crown Estate already had a target of 20GW to 30GW of new offshore wind reaching the stage of seabed lease by 2030, now this will be greatly helped by GM Government.

GB Energy has £8.3bn of tax payer funding, now the government is seeking private investment of up to £60bn. Given that these are to be offshore developments, currently confined to England and Wales, involving Crown Estates land, they should attract less obstructions to rapid development.

However, this is still highly contentious with the Shadow Energy Secretary Claire Coutinho saying: "Labour have already been forced to admit that their flagship energy company won't generate any energy, and now we know it's a financial black hole - funnelling taxpayer's money into reducing risk for multi-million-pound energy companies".



A Crown Estate map from 2022, showing some of the potential areas for wind turbines off Southwest England and Wales. Most of these lie well out to sea.

Earlier, in response to the King's Speech outlining the government's programme for this session of parliament, the renewables sector had welcomed the announcement of GB Energy and also reforms to The Crown Estates. The Crown Estate Bill will allow them, in their role as seabed landlord and key player in developing wind power in the UK, the facility to borrow money.

GB Energy will have its headquarters in Scotland and with the £8.3bn of funding will seek to be a significant player in the energy market over the coming five years and beyond.

On the wider economic front, the government also hopes that this announcement will also stimulate the offshore wind industry and particularly the supply of wind turbines and blades. One company who's hoping for a boost is Hull's Siemens Gamesa, based at the Port of Hull on the east coast of England.

Opened in 2016, the company initially manufactured 75m blades and then later 81m blades. In 2021 Siemens invested £186 million in its Hull manufacturing plant and now produces what it terms 'next generation' blades. The latest announcement can only be seen as good news by Siemens and the rest of the supply industry.

Peak District rail line remains closed after four months as Network Rail reveals the true extent of the problem...

Over the past couple of years, we have regularly kept you up to date as our rail network tackles the problems associated with landslips caused by freak weather conditions. One such problem first revealed itself in May after a particularly severe storm affected the embankment between Chinley and New Mills on the route between Sheffield and Manchester. Luckily for passengers this isn't the only route as a later route crossed the valley on a different alignment.

As Network Rail engineers reveal in the following account, this isn't a problem that comes with an easy, or quick solution:

"Following emergency ground investigations, engineers confirmed that work is required to repair damage to the earth that supports the railway. Engineers are working 24/7 to stabilise the embankment in the Hague Bar area of New Mills until autumn. If the work is not

carried out, there is a risk of 50,000 tonnes of earth falling from the railway into the River Goyt.

The team are drilling 160-metre-long pile foundations into the earth to create an underground retaining wall between the railway and the river to stop the movement of the ground. Once this is complete, the team will need to rebuild the railway on top of the stabilised earth to allow trains to safely operate.

Inserting a length of pile at the Hague Bar site.
(Image: Network Rail)

This will be carried out as quickly and efficiently as possible to minimise disruption to the community and to reopen the railway fully as soon as possible."

What is particularly challenging about this area is the thickness of post-glacial and glacial material, the so called 'drift'. Your Editor recounts a conversation with the late Dr Fred Broadhurst of the University of Manchester about this area. This is particularly thick drift, hence the need to drill 160-metre-long piles, Fred believed that this formed part of major meltwater route to the Irish Sea at the end of the last glaciation.

There's evidence that even the nineteenth century railway builders were aware of the problem and there have been other slips in the area in recent times, on both this and the alternative route.

The pile and wall solution in progress of being built at Hague Bar.
(Image: Network Rail)

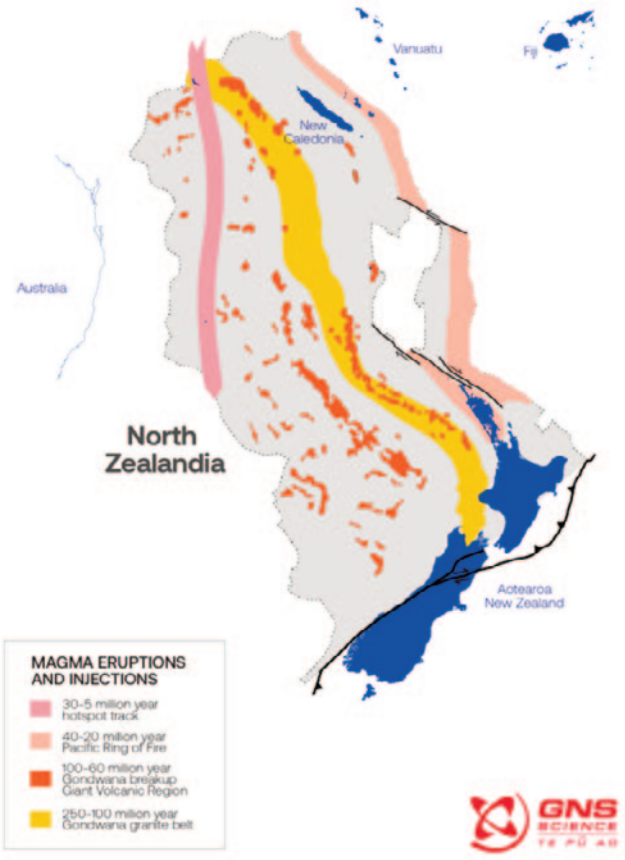
As for the time frame for completion of the current, works, Network Rail are only saying 'until the Autumn'. Current train service alterations are given until August 26th, but it will be a case of having to wait and see.

With the UK facing on-going weather anomalies, this is surely a problem that will be faced by Network Rail at other locations around the country. We wish them well and we'll continue to bring you the news when they do.

GNS Publishes new maps of Zealandia...

Zealandia is officially the Earth's 8th. continent having first been discovered in 2017. Some 95% of it currently lies beneath the ocean waters that surround New Zealand.

Since the first maps emerged the New Zealand geological survey GNS Science, has been working tirelessly mapping the continent and working our its geological history. In October 2023 they announced that they had completed the mapping project and had made several major new discoveries, including a stretch of New Zealand's ancient backbone and a giant volcanic region, the size of the current country.

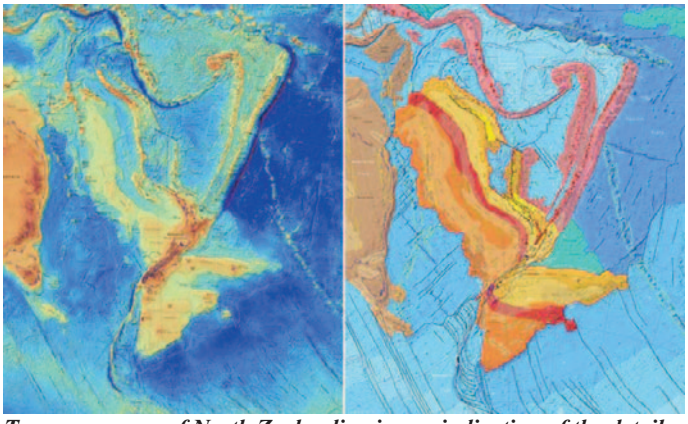


The new map showing the Gondwana granite belt that dates from between 250 and 100 Ma.
(Image: GNS Science)

The latest study, builds on the work carried out on South Zealandia, published in 2019 by turning attention to the area known as North Zealandia. The study, entitled ***"Reconnaissance Basement Geology and Tectonics of North Zealandia"*** was published in the Journal ***Tectonic***s.

This what the plain language summary to the paper says:

"To support investigations of the Zealandia continent, we dredged rock samples from the seabed of the Fairway Ridge, Coral Sea. Basalts, sandstones, and pebbles from the sandstones were analysed and dated. The sandstones are Late Cretaceous (~95 million years old) and contain Early Cretaceous (130–110-million-year-old) granite and



Two more maps of North Zealandia give an indication of the detail that has been possible via this underwater mapping project. (Image: GNS Science)

volcanic pebbles. The basalts are Eocene (~40 million years old). We have used these results, along with regional magnetic anomaly data, and information from other studies to make a map of the undersea geology of North Zealandia. On land and offshore reconnaissance geological mapping of the entire 5 Mkm^2 Zealandia continent is now complete."

As is so often the case with a study such as this, it presents us with more questions than answers, particularly about the nature and exact timing of some of the events. That said we now have a much clearer impression of why and when the Gondwanan continent broke up.

For more details on this amazing project go to: https://www.gns.cri.nz/news/zealandia-just-became-the-first-ever-

Yellowstone blast causes visitors to flee...

Yellowstone National Park in Cheyenne, Wyoming, attracts thousands of visitors every year to see the hydrothermal features. What they don't expect to see is a sudden explosion of steam and rock fragments that sends them running for their lives, but that's exactly what happened on July 23rd.

The scene as National Park Staff assess the damage to Biscuit Basin boardwalks after a hydrothermal explosion (Image: National Park Service)

According to ***US News.com***, video posted online showed a couple of dozen people watching from a boardwalk as the eruption sprayed and grew in front of them. As water and debris began to fall, they ran to keep clear, some yelling "Back up!" and "Holy cow!" People then turned to watch the spectacle under a huge cloud of steam.

No injuries were reported, but the Biscuit Basin area was closed for visitor safety. The eruption damaged a boardwalk that keeps people off Yellowstone's fragile and often dangerous geothermal areas.

Vlada March was on a tour in the basin when her guide said something unusual was happening. March started taking video.

"We saw more steam coming up and within seconds it became this huge thing," said March, a California real estate agent who was with her mom, husband and their two kids. "It just exploded and became like a black cloud that covered the sun."

"I think our tour guide said 'Run,' and I started running and I started screaming at the kids, 'Run, run, run,' and I continued filming what I could," she said.

Sudden hydrothermal events like this one are not completely unknown in Yellowstone, but are rare. They don't seem to lead on to anything more sinister and usually short lived.

NASA - peers into the pits of the Telfer Gold Mine of Western Australia ...

Amazing detail is revealed in this image captured by the OLI-2 (Operational Land Imager-2) on Landsat 9. (Image: NASA)

Deep in the arid outback of Western Australia, miners have excavated rust-coloured soil to reach the precious minerals below. For the first time the scale of their work can be seen thanks to a NASA Landsat image.

This comes from NASA's Earth observatory:

"Telfer mine is located about 400 kilometers (250 miles) southeast of Port Hedland, on the land of the Martu Indigenous people in the Great Sandy Desert. The soils have a reddish tint from the iron oxides that have accumulated from millions of years of weathering.

This part of Western Australia is known for being rich in natural resources, including petroleum, iron ore, copper, and certain precious metals. Beneath the soils, veins of gold and silver run through sedimentary rocks, such as quartz sandstone and siltstone, that formed during the late Proterozoic, about 600 million years ago, when much of Australia was under water."

Telfer is one of the world's most productive gold mines; in 2023 it yielded 349,000 ounces of gold.

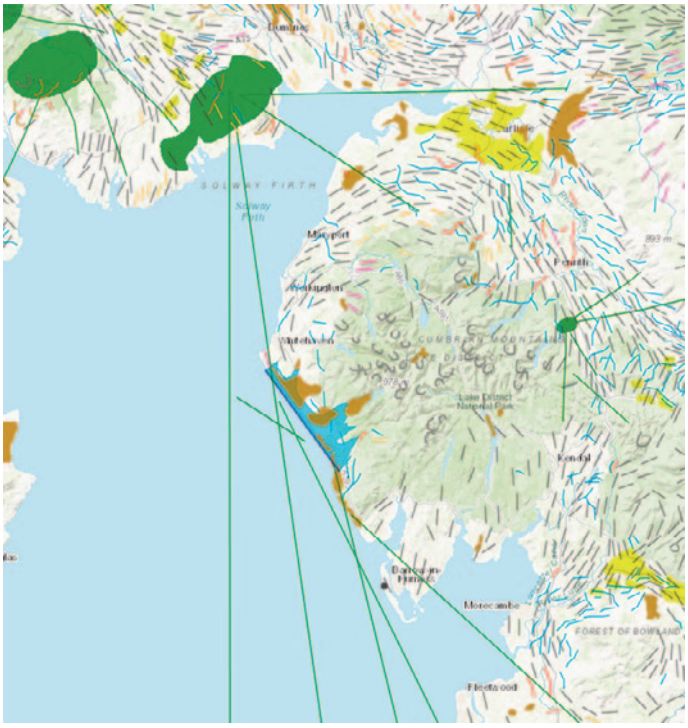
Author: Sylvia Woodhead

Illustrations courtesy of author unless shown.

The fascinating geology of pebbles a 'way into' geology...

What's this? Two issues running and Slyvia Woodhead has an article in Down to Earth? I just couldn't resist letting Sylvia share this with you all!

A lot is said about fossils beingf a way into geology for people, padrticularly youngsters, but pebbles run them a close second! Here, Sylvia let's us all in on a popular beach activity...



BRITICE Map showing erratics from Criffel in Scotland to Walney.

Cumbria GeoConservation (CGC) organised a hugely successful Pebble Event on Walney shore, for GeoWeek, at the end of May 2024, which was also half term week for schools. We based ourselves in the Family Room at the Round House Hub and Café at Biggar Bank, SD 178 676. Thorough preparation, fronted by Audrey Brown, CGC President, ensured success on the day. A prior visit was made to assess the range of pebbles likely to be found on the shingle beach, and how we would interpret them to our target audience of families with young children.

Walney Island itself is a double-ended shingle spit to the west of Barrow-in-Furness. It is composed mainly of post glacial sands and gravels. It was expected that most of the pebbles on the beach would be glacial erratics brought from the north by ice moving south down the Irish Sea. Longshore drift is here to the south. Examination of the BRITICE map showed that we might expect to find granites from Scotland; Dalbeattie and Criffel in addition to Cumbrian Eskdale

Collecting pebbles on the beach at Walney - what's not to like?

granite. We hoped that these would be distinctive. The bedrock of the Furness Peninsula inland from Walney Island is composed mainly of St Bees Sandstone, with Carboniferous Limestone, and Windermere Group further inland. We were surprised at how few 'local' pebbles turned up on the beach. In common with many beaches, our preliminary pebble collection posed many problems for identification, which CGC members argued about. A surprisingly large number of the pebbles looked greyish and undistinguished. On breaking, these appeared to be dolerite and we remain puzzled about the source of these. Could they be from the Fair Head Sill in Northern Ireland? Luckily, because they look like just boring grey pebbles, few of our young finders selected these to bring to us.

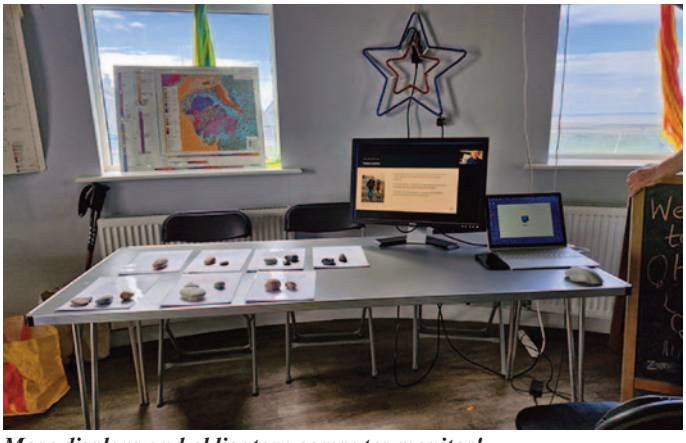
Busy inside the Round House

A further concern which emerged during the planning phase was the legality of pebble collecting. While the two recurved spits are

Excited youngsters examining the displays - and even the hi-viz gets a day out!

Geological Conservation Review (GCR) sites, the proposed pebble event site has no protection for its pebbles. Walney Island is in the new Westmorland and Furness Council, but Cumberland Council, further north, has produced a new statement, in its first Climate and Nature Strategy, stating that collection of pebbles from its beaches is unlawful. A recent headline screamed about a £1000 fine for removing pebbles from north Cumbrian beaches. We ensured that our advertising mentioned that all pebbles would be returned to the beach, as indeed they were.

Having established something of the types of pebbles expected, simple interpretation sheets were prepared, in primary school language, designed for our target audience. We had displays of basic Cumbrian geology, of former ice streams, examples of pebbles, and small prizes, which included some casts of fossils. We also had a copy of Clive Mitchell's Pebble Spotters Guide on display. We had some sheets from the Scottish Geology Trust's excellent online Beach Pebble Guide for people to take away. Audrey had made seven of us badges saying 'Pebble Expert', and we wore hi-vis so we could be identified.



More displays and obligatory computer monitor!

The majority of the advertising was via local Facebook groups, including that of the Round House. On the morning, we waited somewhat anxiously. Would anyone come? We had a signing in sheet, small buckets to collect pebbles in, and a bigger bucket for return of the pebbles to the beach. To our delight, 75 people signed in, and there may have been more. Cones were put on the beach to mark out the collecting area, and some of us provided help and support for families in the beach. Feedback was very positive– free, fun and educational were the main words used.

It was pretty hectic when families returned clutching their 'finds' of pebbles, in buckets, bags and pockets. There was a real air of discovery. Limestone pebbles with holes, bored by piddocks, were popular finds. There were fewer sandstone pebbles brought in than expected, and some of these were quite rough, suggesting that the Triassic sandstone does not survive long in the high energy wave environment of the Irish Sea. Children's eyes picked out their favourites - white quartz, nearly a gemstone, and pebbles with white lines (veins of quartz or calcite). Small pieces of slag from Barrow's steel works, notable for their light weight, were also popular finds.

Other artificial pebbles included pottery and clay pipes. Some children favoured broken pebbles, which helped to explain how pebbles get smaller over time. We had fewer questions than expected about the age of the pebbles, which we estimated for 400 million years for some of the oldest. One prize moment was a small girl explaining to one of our members that there are 3 types of rock: sedimentary, igneous and metamorphic. Feedback reports that this young pupil gave a presentation to her primary school, which so impressed her teachers that Audrey has been asked to go into the school to talk to the pupils about rocks. A very good outcome.

Man made material is common - here's a selection of iron slag.

We were delighted at the popularity of the event and have plans to repeat it for local geological groups, since it is adaptable for all ages. It proved that there is a great enthusiasm to learn about the coastline. We will certainly be doing it again for local Barrow families, perhaps in the summer holidays, and it links well with a government funded project at nearby Earnse Bay, which aims to encourage people to connect with nature, making them more aware of the natural wonders of Morecambe Bay. Its pebbles can surely be counted among these natural wonders. We commend a pebble collecting event as providing geological education suitable for all levels.

The Editor comments: So there you have it - a great activity for all the family and it's all perfectly legal - so long as you don't remove the pebbles! Lots of other places lend themselves to a great pebble hunt. North Wales, all the way down the East Coast from Scotland to Essex. So what are you waiting for? Get your local geology group to organise a similar events and then tell us about it.

Author: Patrick Gaffikin

Illustrations courtesy of author unless shown.

Collecting rocks, minerals and fossils - a guide

Hot on the heels of an article concerned with hunting for pebbles on the beach it seems enitrely appropriate to examine the collection of rocks, minerals and fossils.

Paddy provides you with his guide to this fascinating pastime...

'Geology is a capital science to begin, as it requires nothing but a little reading, thinking and hammering.'

Charles Darwin (1835)

Why collect rocks, minerals and fossils?

A sample of basalt collected in Co. Antrim. Basalts are always fine-grained and are dark-grey or black in colour.

It may be asked: "How can I become skilled at identifying rocks, minerals and fossils?" A main way is to collect geological specimens. Initially it can seem daunting doing what is called field work but, with practice, it can become an enjoyable and absorbing hobby. Studying illustrated geology books, viewing geological collections in museums and, above all, joining a local geology society, which provides field trips, are some ways to enhance your knowledge of geology and enable you to become proficient at identifying and collecting geological specimens.

Down to Earth offers field excursions both at home and abroad and these are led by experienced geologists who will enlighten participants about the subject. While attending these outings you would usually have the opportunity to collect samples. But, it is important not to be discouraged. There would be no professional geologist in the world who would be able to identify every rock, fossil and mineral that exists. Also, over the years, many amateur geologists have made significant contributions to the science of geology and, unlike many scientific disciplines (for example physics and chemistry), geology is still a subject in which amateurs can play an important rôle.

Rocks are more abundant than fossils and minerals and usually there are no restrictions in collecting rocks but, because fossils and minerals are relatively not as common, it has to be emphasised that restraint is necessary when collecting these. Fossils and minerals should only be collected from loose material because fossils and minerals in situ provide excellent teaching aids and have research potential. Instead of removing them, photograph them. Photographs of fossils and minerals are the next best thing to the actual samples.

In the UK, the collection of material from beaches is sometimes banned - check for local restrictions.

A specimen of granite collected (from the Mournes) in Co. Down. Granites are usually coarse-grained and are often light in colour.

Equipment for field work

Items useful for fieldwork - but the most useful, are your eyes!

Besides the items illustrated, a safety helmet for working in quarries or below cliffs, where there could be rock falls, and goggles or safety glasses for eye protection, when splitting rocks, are considered essential. Compared to a few years ago, hammers are now used quite rarely by most amaetur geologists, and even some Universities don't

recommend them any more.

If you do want to make use of a hammer, note that it is the flat or pointed end of the hammer that is used. Stout footwear is also recommended – e.g. walking boots - but Wellington boots are not suitable for clambering over wet rocks, for instance at a coastal region, as these can cause slipping.

A good qaulity x10 hand lens is an essential purchase. Anything above x10 is a bit of luxury though. A field of view of about 20mm is fine. To make the best use of it, hold the lens close to your eye and then bring the specimen towards you until it's in focus.

Most people take notes in the field and so a notebook is also an essential purchase. However the weather in the UK (and Ireland) and be wet, so get one that has either waterproof plastic sheets, or water resistant paper. Geo Supplies carries a big range including well proced books from Chartwell under the 'geo-notebook' banner.

In order that you get the right equipment, you are srongly advised to make use of a specialist supplier, such as Geo Supplies or Geology Superstore, both of whom have online ordering facilities.

Where to search for samples

A manganese mineral specimen, called a dendrite (because of its tree-like appearance) from Cloughfin Port, Islandmagee, Co. Antrim. It was collected from loose material and could be mistaken for a fossil.

Some places to explore for geological samples would be: quarries, rocky hills and mountains, outcrops at coastal regions, beaches, road cuts, below cliffs, in shallow streams etc.; anywhere really where there are rock exposures. Invariably, fossils are never found associated with igneous rocks like granites.

If searching for fossils look-out for loose material from sedimentary rocks like shales, limestones, chalk, mudstone etc. Metamorphic rocks, especially those that have been subjected to intense heat and/or pressure, like gneisses, do not yield fossils.

If you aren't lucky enough to live in the countryside, or close to areas with rock outcrops, you might have to be a little more imaginative. A lot of rocks is used as loose aggregate and fw people would argue about one small piece of slate, or even a marble chipping, if it were to 'disappear' from their driveway! As always with your specimen collecting, be considerate and be polite. In general if it's small and you only take one pieice you are unlikely to be challenged.

A type of oyster (now extinct) fossil, called Graphaea, found in clayey deposits in Co. Antrim.

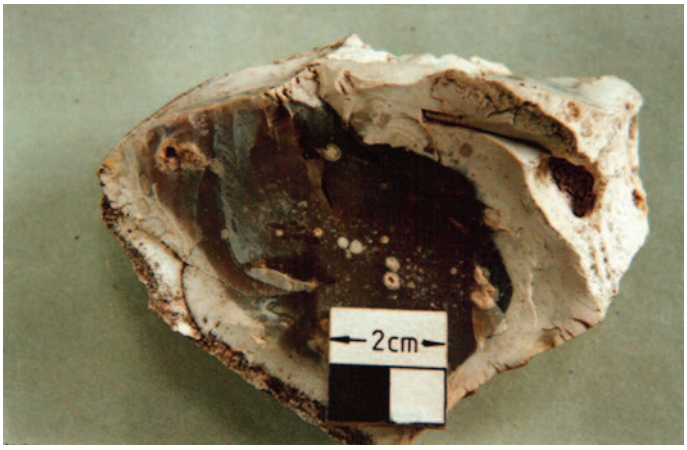
Storage of specimens

An example of how geological samples can be displayed at home.

When collecting specimens, they could be wrapped in newspaper while fragile ones should first be covered in tissue paper and then wrapped in newspaper. It is of paramount importance to record the locality at which the sample was found – this is just as important as the sample's name.

Back at home the collected pieces, with the exception of water soluble minerals like halite, could be washed with soapy water and soil etc. removed with an old toothbrush while, needless to say, great caution should be taken with fragile finds. At home, specimens could be displayed and stored on, say, shelves in a cabinet. These may be able to be acquired at car-boot sales, used furniture stores or you may be able to construct one yourself.

While out exploring areas for rocks, fossils and minerals it is imperative always to observe The Countryside Code.



A broken flint nodule from the Cave Hill Chalk in N. Belfast.

A summary of the Countryside Code

- Enjoy the countryside and respect its life and work.
- Guard against all risks of fire.
- Fasten all gates.
- Keep all dogs under close control.
- Keep to public paths across farmland.
- Use gates and stiles to cross fences, hedges and walls.
- Leave livestock, crops and machinery alone.
- Take your litter home.

A natural geological laboratory

The great outdoors has sometimes been described as a natural geological laboratory. The outdoors is replete with geological wonders and observing them and collecting rocks, fossils and minerals can be very theraputic. But, even if your quest for specimens is not productive, you will reap the benefits of being out in the fresh air!

---

rockstars

Author: Chris Darmon

Another famous rock...

Alabaster

A recent visit to Penarth on the coast of South Wales was a reminder of the existence of a beautiful white material which we call Alabaster. Whilst many more people are familiar with its close relative Gypsum, far fewer know about Alabaster.

Rough Alabaster from Penarth Head. (Image: BGS)

For an informed view of the material, I went to The Oxford Natural History Museum's website for this information:

Geologists use the term 'Alabaster' for the compact fine-grained variety of gypsum, a mineral composed of hydrated calcium sulphate. Thick beds of gypsum formed at various times in geological history by the evaporation of sea water.

Gypsum is soft and when it forms fine-grained masses, it is very suitable for carving. Faustino Corsi calls this stone by its Italian name, 'gesso', and gives it a class of its own in his collection. Important sources of gypsum 'alabaster' are in the areas of Volterra and Castellina Marittima in Tuscany, Italy, and in the Midlands of England.

In medieval times, the carving of English alabaster reached factory proportions, and monuments and statues made from the stone are seen in churches across Europe.

There is uncertainty as to whether the name 'alabaster' comes from a place of that name in ancient Egypt, or from the small ointment jars called 'alabastri' that were made there. Either way, the original use of the term alabaster was for a fine-grained banded deposit of calcite, a mineral composed of calcium carbonate, which was obtained from Hatnub, Mallawi, and other locations in the Nile valley. It was deposited as flowstone, stalagmites and stalactites in extensive cave systems. Similar compact banded rocks are deposited by hot springs. Archaeologists refer to rocks formed by both mechanisms, as 'alabaster'. Geologists would refer to these stones as compact banded travertine, but might use the term 'oriental alabaster' to distinguish it from the gypsum alabaster."

Wikipedia provides us with some information about it's occurrence in England & Wales:

"Alabaster occurs in England in the Keuper marls of the Midlands, especially at Chellaston in Derbyshire, at Fauld in Staffordshire, and near Newark in Nottinghamshire. Alabaster is also found, in smaller quantity, at Watchet in Somerset, near Penarth in Glamorganshire, and elsewhere. In Cumbria it occurs largely in the New Red rocks, but at a lower geological horizon. The alabaster of Nottinghamshire and Derbyshire is found in thick nodular beds or "floors" in spheroidal masses known as "balls" or "bowls" and in smaller lenticular masses termed "cakes". At Chellaston, where the local alabaster is known as "Patrick", it has been worked into ornaments."

This is a worked piece of 15th century Chellaston Alabaster and is quite valuable. (Image: Hanson Auctioneers)

article

Author: Dr Martin Whiteley

Illustration courtesy of author.

A lava flow revisited

In the last issue of Down to Earth, I shared with you my delight at seeing a superbly cleaned up Millersdale lava flow outcrop. on the old railway line above Litton Mill.

Since then I've heard from one of the people who took part in the geological clean up and also had this controbution from Martin Whiteley, which I'm happy to share with you all...

I was pleased to see the lava flow in Litton Mill Railway Cutting featured in the May issue of ***Down to Earth*** and ***DtoE Extra***. By coincidence I happened to visit this recently-cleared site just a couple of days after reading your article, whilst showing a group of geologists from Sussex around the Tideswell area. The exposure is now in good condition and it's possible to see the toe of the flow and part of its upper margin for the first time in decades.

The most obvious feature is the number and variety of entrained pillows and blocks within the lava. They occur in each of the three or four successive flows that dip gently towards the east, with some showing chilled margins, internal fractures and sphaeroidal weathering. The enclosing lava has a distinctly fragmentary texture that is perhaps caused by rapid cooling in a subaqueous environment. Both the lava and the pillows are extensively altered and deeply weathered, such that their original mineralogy can't be determined in the field.

As a result of the recent work I'm far less confident that there are any limestone blocks caught up within it. Certainly some blocks react with hydrochloric acid (and therefore contain carbonate) but I now think that they are volcanic pillows or fragments that contain secondary carbonate minerals in small vesicles, or carbonate that results from the decomposition of plagioclase feldspars.

I'm also coming around to the idea that the whole lava pile might have erupted under water and effectively shattered and became fragmentary as it cooled rapidly.

The upper surface of the lava is largely inaccessible, but it is marked by a prominent pale brown horizon that may represent a weathered surface. The top of the lava pile may have been subjected to subaerial erosion before being drowned and buried by a renewed phase of carbonate deposition.

Another obvious feature is the localised over-steepening of the Monsal Dale Limestones above the toe of the flow. Gordon Walkden attributed this to easterly dipping fore-sets within two successions of limestone separated by an angular discordance, although other interpretations are possible.

Unfortunately the outcrop is so deeply weathered and altered it seems unlikely that thin sections would tell us very much about the original mineralogy and K-Ar dating would likely produce only spurious results.

I don't know who cleared this site but the geological community owes them a debt of gratitude for revitalising one of Derbyshire's most interesting exposures.

The Editor comments: Thanks for this Martin. I've used the over steepening of the limestone in my explanation of this site by terming the lava flow as 'the elephant on the M1'. The authorities could not afford to move the elephant obstruction and therfore laid layers of tarmac over it, until higher up it could be levelled out! Now I'll have to think again.

A selection of your responses to Chris's piece in DtoE 127 "Wake up to geology" collated by the Editor

Yes, you have woken up to geology

In the last issue of Down to Earth, I penned an 'in my opinion' piece on the state of geology in the UK. I was initially disappointed with your response, but after it also went in DtoE extra, I'm now delighted, particularly with the fact that other people have sought to raise some of the issues in their own sphere of influence.

Thank you to you all, please feel free to comment further.

Hi Chris

Re geology study

My neighbour's daughter is in her first year of a Resource Geology degree with the University of Exeter at their Penrhyn campus. I gave her my geology hammer (from my degree days in the late 1960s). She was told not to use it for some health and safety reason.

When I studied geology at Cardiff University half the class were Norwegian (men), studying geology as part of their mining engineering degree. I was studying for a joint degree in archaeology and geology, and was one of only three women doing geology, whereas over half the archaeology class were women.

The worst part of studying geology was the boots! There were no lightweight waterproof boots for women in those days so I bought men's heavy 'road-menders' boots which I constantly dubbined against wet. They tore my feet to shreds on field trips. I dreaded the trips, especially as our prof took pride in never telling us how long the trip would be, or the route - just 'follow me'. But I survived!

Liz Randall

Dear Chris

Keeping things going in geo-education

Elizabeth Devon, Pete Loader and I continue Chris King's legacy* with ***www.earthlearningidea.com***, launched in 2007/8. Pete is writing more techy type activities with the demand for more maths in A Level, while I continue with things I can more or less understand, as well as making short videos, so it keeps us out of mischief.

Peter Kennett

* The late Chris King was Professor of Geo-Education at Keele University and a tireless promoter of Earth science for many years.

Dear Chris

A letter from Chris's past

I read your article in the recent Down to Earth Extra about your career, with obvious interest. I am sorry you found some of the courses dull and boring. Hopefully, fieldwork made up for it and particularly the Cosmos package tour to Torremolinos! Methods of teaching are very much different now.

I was recently looking for another photo from around that time and came across a print of your geology class which I have scanned. I thought you might like a copy. It was taken on the Torremolinos field trip in Spain opposite Gibraltar (excellent turbidites showing complete Bouma sequences were on the beach).

I can name Cecilia (Clements, now Brasier) and Mark Piasecki (now deceased) and you, and recognise the faces of almost everyone else but cannot put names to them.

I am happy for you to use it in ***Down to Earth*** if you want to. It's very much a photo of the 1970s era of geologists with the crossed hammers!

I am retired but continue to give geological talks, lead field excursions and am involved with the Extractive Industry Geology Conferences (in Hull 2-5 Sept this year) amongst other geological activities.

Peter W. Scott
Emeritus Professor
Camborne School of Mines
University of Exeter

University of Hull geology students (including your Editor) taken in Spain's Costa del Sol in December 1973 (Image: Peter Scott)

Dear Chris

Setting out my response

I am responding to your article It's time to wake up to Geology in the latest ***DtoE extra,*** as I found it very thought provoking. It is all too reminiscent of my own experiences, especially in my involvement regionally and nationally, with the Royal Meteorological Society (RMetS) and the British Hydrological Society (BHS).

We have similar educational backgrounds, and I also found it difficult to obtain formal teaching in Geology, despite my school being a large State Grammar School. The School's career/higher education advice was poor, and as there was no availability of Geology at 'A' level, I selected options to match the available university courses with a bias

towards physical geography and geology.

Unfortunately the positive and 'go-for-it' mentality is still lacking in education, as I found from experience 10 years ago. I had been asked to participate in an evening to provide advice on careers to 15-16 year olds at a local high school. I was advising on the water and environment sector. My chaperone was a bright young lady in the 6th form. I found out that she was doing 'A' level sciences - Biology, Chemistry and Physics, so I asked if she was aiming for a medical or pharmaceutical degree. "Oh no" she replied, "I am aiming to study medical journalism." Apparently the school felt a degree course would be "too hard". What a way to develop enthusiasm and support ambition. One gets the feeling that teachers and education administrators are preoccupied with ticking boxes and achieving their targets.

I share your concerns with the perennial problems of how to obtain speakers, how to maintain membership through-flow, and especially the recruitment of young people. This is all too familiar to anyone trying to keep local groups alive, be they Parish Church Councils, bowls clubs or village groups. Going back to the failure of education, there also seems to be very little experience of volunteer involvement for young people, e.g. Scouts, Boys Brigade or youth clubs, and after school societies and sports have virtually disappeared from the State Sector. In the early years of my career, I was encouraged by my employer, a consulting engineering firm, to attend lectures. I was fortunate to be in London, but I'm sure I would have had similar opportunities in most major cities. However, it now appears that regional centres for RMetS and BHS are struggling to remain viable. I realise that remote meetings do something to offset these difficulties, but they still do not allow for the personal networking that accompanies live meetings.

There are no immediate fix-it measures, especially after what I have seen as a prolonged dumbing down of education standards over the last 40+ years. Successive governments have produced two generations of a supine and unquestioning population who will accept anything that comes out of a television or a computer app. It is up to us to explain when we get an opportunity that geology is fascinating subject and vitally important in many ways. It is not magic or "too-hard", and it may counteract the ignorant bias that I have encountered in public fora, that geology is a propaganda tool of the oil and mining lobby, and thus to be vitriolicly denied by 'green' activists and environmental groups. These arguments are perhaps no more negative than the flat refusal I received from the Curator of Geology at Ipswich Museum in the mid sixties when I asked if he could offer me a voluntary holiday job. "No" he said: "you haven't any experience". Perhaps the way to wake up to Geology is to be unashamed and non-defensive about what we do.

James Dent

Dear Editor

A view from New Zealand

I've always been so impressed by your continual enthusiasm and activities. I really enjoyed reading your 'Wake Up' article and fully subscribe/support the viewpoint.

Interestingly I overlapped to some extent with your history e.g. I did a PGCE with David Thompson at Keele (only available at Keele and Bath at that time, now nowhere, and I taught geology at A-level and to low ability 14-16 year olds at a Comprehensive in Hexham. Unlike your earlier experience I was at a Durham Comprehensive, only just turned from being a Secondary Modern. Frankly a roughish school but I met great peers and teachers with good hearts and some with great talent and although not in geology but other areas, I developed well including taking advantage of many field trip and walking trips to the Lake District and other parts.

Through my time at BGS and Leicester I worked with and supported and was supported by numerous amateur geology societies including Westmorland, Yorkshire, Stamford, and local OU groups. Field trips and lectures etc. In New Zealand I came to Auckland University of Technology to work with the less privileged students, but unfortunately everything has been a struggle.

Now I'm close to the end of my professional life, at least full time. Looking back, I have benefitted myself from WEA courses and greatly admired them. Similarly I taught at Adult Education courses and totally agree that it was so foolish to lose the non certified learning for self improvement and fun areas - so short sighted. Not everything improves with time at all as you say in your article. The world has changed, internet and related E-thinking has definitely impacted good in many ways, but in terms of less involvement in face to face activities especially with youth there has been an impact.

Just writing to thank you for your lifetimes work, for all the activities you've been involved in - so inspirational!

Professor Mike Patterson

Dear Chris

Thoughts on teaching geology in the 2020's

I enjoyed your 'It's time to wake up to geology' article. You might be interested in this, my thoughts on teaching geology in a university in the 2020's, This extract comes from ***'The Edinburgh Geologist'*** Issue 75, Spring 2024:

"In conclusion, why study geology? I think my personal favourite is that geology is everywhere — not just in the natural world but in the built environment too. To cite an example, my local post-office (built of a Carboniferous sandstone) has raised flowerbeds outside. The vertical parts of these are Caithness flagstones, and the horizontal capstones appear to be the so-called 'green slates' of the Borrowdale Volcanic Group from the Lake District.

By coincidence, I take student fieldtrips to NE Scotland and the Lake District, so there is my field teaching in a flowerbed! The University of Edinburgh campus has some good examples too — in a recent lecture to students as preparation for our Lake District fieldtrip, I introduced the Borrowdale Volcanics, which make up most of the high ground in the Lakes. I suggested that anyone who wished to see what these rocks looked like had only to go downstairs to a basement café, where the walls are clad in polished slabs of the green slates.

Geology also travels well. An arkosic sandstone, for example, is much the same in Asia as in the UK, and can be identified by anyone with basic geological skills. The processes that form rocks are similar worldwide too, so our example sandstone will have the same range of options to consider for the depositional environment in Egypt as in Edinburgh. The same cannot be said of other sciences that have an important field component, botany or zoology for example."

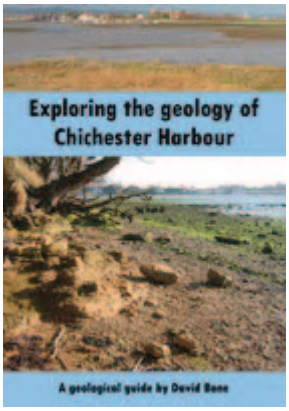
Mark Wilkinson,
University of Edinburgh

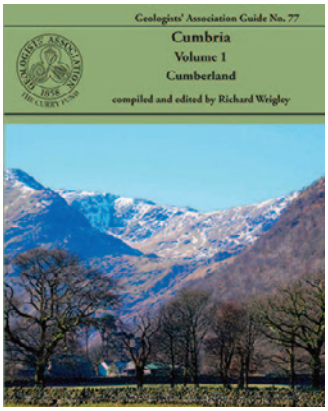
in-house

A look at some of the new and exciting happenings in the world of Down to Earth & Geo Supplies - by Chris Darmon

Summer and it's time to get out and about...

These days it's possible to download a lot of useful field information that used to be available in printed leaflets. That said, there are still lots of field guides around that are not available online. This is particularly the case with guides that cover a whole area such as the Lake District, or popular islands such as Arran.





Here are Geosupplies we stock several hundred guides in printed form, including all of the in print Geologists' Association Guides. Guides cover a couple several bookshelves here in our shop and a well worth a browse!

We also have some even cheaper (or free) geological leaflets, some of which have been out of print for some time.

Whilst you are here, why not also browse our extensive coverage of BGS maps? Most 1:50 000 and 1:25 000 maps cost £12.00 a saving of £1.00 on the postage inclusive prices.

So, why not pop into our shop this Summer and take a look! You will never pay more than the online price and very often you will get the item cheaper!

Why not check in advance to ask about a specific item?
Call us on 0114 245 5746
or email: sales@geosupplies.co.uk

Changes to our shop opening hours...

We are always pleased to see you, our ***Down to Earth*** readers at our shop that's just 5-minutes off M1 Junction 35.

We just want to inform you that our Saturday opening hours are now 10.00-1.00 (rather than 9.30). Our Monday to Friday hours remain as 8.30-4.00.

Shop visitors are often surprised to see that we also operate a well stocked stationery shop with many hundreds of product lines across a range that includes art and craft supplies as well as business and social stationery. We are also the local print and copying shop. So come prepared to stay awhile - there's a lovely coffee shop close by!

Local on-street parking is normally available within 100 metres of the shop! Alternatively why not combine a visit with shopping at ASDA Chapeltown which is just a 2-minute walk away?

To check on availability of a specific item ring us on: 0114 245 5746 or email: sales@geosupplies.co.uk

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- *For some trips we have a hired minibus but on other trips we will use shared cars, or even public transport.*
- *Dates shown in this listing are the start and finish dates.*
- *Where prices are quoted, they are per person in a shared twin/double room.*

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Autumn 2024 - it's still not too late...

We can still accommodate a few more people on two trips this Autumn, both in October. Autumn in Scotland can be a real treat with the lovely colours of the season, combined with a warm hotel in the town of Fort William. We can also offer the Yorkshire Dales, closer to home and a great place for a 5-night break before Winter sets in.

Contact us NOW for a booking form!
Email: downtoearth@geosupplies.co.uk or ring: 0114 245 5746

The Fort William area (10-nights) - October 4-14 £1595
This is one of the undoubted highlights of the entire year. We've gone to the max to bring you a comprehensive 10-night itinerary based in this iconic Highland locality, at the comfortable Croit Anna Hotel.

A new angle on Glencoe (Image: Scottish Geology Trust)

We'll be taking in the local geology of Glen Nevis, the volcanics of Glencoe the slates of Ballachulish and also more distant places such as Mallaig and Ardnamurchan. The trip will also include an excursion

Our hotel, Croit Anna, on the outskirts of Fort William.

by boat on Loch Linnhe and a train trip to Mallaig which includes the famous Glenfinnan viaduct. This trip offers excellent value for 10-nights. Don't let the Autumn date of this trip put you off, at this time Scotland is at its very best and the midges have gone for the season!
See the brochure online - get the booking form from us.

The Yorkshire Dales (5-nights) - October 21-26 £895
Amazingly, we've never managed to base one of our trips in the Yorkshire Dales National Park. We had planned this trip for 2020, but it never happened due to Covid. Our base for the week is the small village of Gargrave, just to the west of Skipton. From here we'll take in some of the highlights of the National Park, including the ancient rocks of Ingleton and Horton in Ribblesdale, the magnificent Carboniferous limestone with its show caves and the younger rocks of the Yoredales and the Coal Measures. It's the perfect way to end our field season.
The brochure for this trip is now available, booking form from us!

The unconformity at Helwith Bridge, near Horton in Ribblesdale. (Image: Upper Wharfedale Field Society)

Don't worry, we don't bite!

All our educational classes and courses are friendly, informal and open to all.

Come and join us!

Welcome to our real world!

The 2025 programme...

We are delighted to tell you that we have now completed our programme of residential field trips for 2025. The public offering of nine trips is less than in previous years because we have two private trips for Americans in the frame. We already have strong bookings, so you are strongly advised to get in as soon as you can.

To make a booking email us at:
downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746
Whilst the brochures are, or will be, available on our website, booking forms are only available from us. You can then arrange to pay the deposit and we'll send you the booking form.

Isle of Arran, March 30-April 6 £1395
Welcome to the Isle of Arran that is the original geologists' paradise. James Hutton was probably the first person to study the geology of Arran in 1786 when he described an unconformity at Lochranza. Since then, thousands have trod the paths to examine the rocks! Arran is currently going down the path to become a full geopark.

Arran on a beautiful day showing the landscape and a magnificent raised beach. (Image: Scottish Geology Trust)

This trip is based at the very comfortable (and warm) Best Western Kinloch Hotel at Blackwaterfoot on the Island's quiet west coast. We spend a leisurely week examining most parts of Arran, making full use of unlimited travel on the local buses - the terminus of the main route is right outside our hotel.
At this time there are vacancies for single and twin/double rooms.

Troodos Mountains, Cyprus April 24-May 1 £1795
This trip is currently full, however we are able to accept a few people onto a waiting list. When we have confirmation of the transport being used we may be able to accept a people from the waiting list.
The brochure is available on our website - take a look before contacting us.

NEW! Scarborough, on the Yorkshire Coast June 1-6 £895
Amazingly, we have never based a trip at Scarborough the 'queen' of the Yorkshire Coast, for the simple reason that we've never found suitable accommodation! Based at the comfortable Cumberland Hotel, we'll spend 5-nights in and around the town, taking in field

The Cumberland Hotel in Scarborough. (Image: Leisureplex)

visits to places like Filey, Forge Valley, Robin Hoods Bay and Whitby to mention just a few. This will allow us to examine rocks from the Jurassic and also the Cretaceous with lots of fossils and sedimentary structures that give us clues to ancient environments.
At the time of writing we have single and double rooms available.

NEW! Isle of Mull & Ardnamurchan June 11-18 £1695
We have managed to secure reasonably priced accommodation at the Park Lodge Hotel in Tobermory and this trip replaces the one previously advertised to Raasay.

Near the lighthouse at Ardnamurchan Point

The Isle of Mull and Ardnamurchan will put two Tertiary igneous centres at our disposal with that on Mull being one of the most imposing, whilst that on Ardnamurchan is the most accessible. We also hope to be able to take in a visit to the tiny Isle of Staffa with its famous basalt columns, depending on the weather. Another highlight will be a visit to the Island of Iona with its Precambrian rocks.

With at least one full day on Ardnamurchan we'll be able to take in the fossiliferous Jurassic sediments as well as the basement metamorphics from the Moinian and the Tertiary igneous rocks.
At the time of writing we have only twin/double rooms available on this trip.

Western Lake District, June 25-30 £895
The Lake District is renowned for its superb landscape and scenery, but access to the central part is limited and accommodation is very expensive. We have previously stayed at Summergrove Halls in Whitehaven, but this is no longer available to us. Accordingly we've turned to Workington and the comfortable modern Premier Inn.

Amazing cliffs at St Bees. (Image: St Bees community)

From Workington we'll be able to access all of the Western Lakes, with trips to see places like Eskdale, Lake Windermere, the iron mines of West Cumbria and St Bees Head.
This trip is filling up fast!

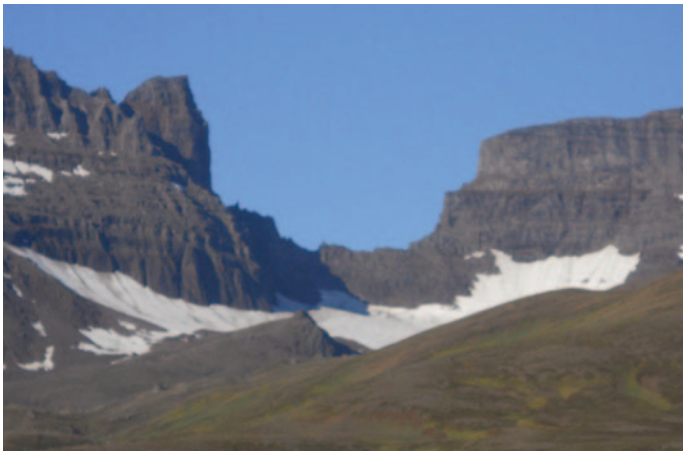
Summer School Peak District, August 9-16 £1395
For the first time in the 7-year history of our Summer School week's we're actually returning to a place that we've visited before. Cliff College in the Peak District of Derbyshire is a well known Methodist theological college. It provides excellent ensuite bedrooms and lovely home cooked food, and makes for an ideal summer school base.

The beautiful grounds of Cliff College (Image: Cliff College)

We'll be sampling lots of the excellent local geology and giving you those added summer school bonuses of evening talks and special visits to places of cultural and historic interest as well as geology.
The brochure is just out - book now!

Iceland - the North & East Fjords, September 1-11 £2595
These days a lot of people go to Iceland, but they very rarely visit the north and east of country. In this trip with our usual guide and driver Ingi, we'll begin at Keflavik near the airport and then travel to Akueyri before working our way clockwise to Myvatn to the volcano Krafla before heading to the beautiful east Fjords.

We'll stop in the amazing geo-village of Borgarfjarðar Eystri to see Iceland's most colourful rhyolitic rocks. The last time we were here we did see the Northern Lights in all their glory!



The Eastern Fjords are beautiful in any season! (Image: Chris Darmon)

We fly back from Egilstaddir to Reykjavik and then to Keflavik where we started. There's an option of an additional night at the end to have a day looking at the most recent volcanic activity on the Reykjanes peninsula and viewing the recent lavas, which will still be hot!
This trip is already more than half full!

NEW! The South Devon Riviera, Torbay, October 8-15 £1295

Distinctive Red Permian rocks of South Devon

The South Devon Riviera coast has been a holiday destination for more than 150 years and we will be staying in a lovely small hotel in Paignton. From here we will be exploring the local area that lies within the UNESCO world geopark. This is an area of great coastal scenery, with lots of Devonian sediments, plus some volcanics. As the geology is best seen from the sea, we'll ensure that we have at least one boat trip out into Torbay to get up close and personal with the cliffs and their fabulous structures. We also hope to take a trip on the Paington and Kingswear steam railway and combine it with another boat trip on the River Dart ot Totnes.
The brochure for this trip is just out so there are plenty of vacancies for all!

For further information or to book,
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We deliver courses that are enjoyable and stimulating whilst at the same time being informative and educational. No one is required to carry out any sort of assessment and there's no entry requirements or formalities.

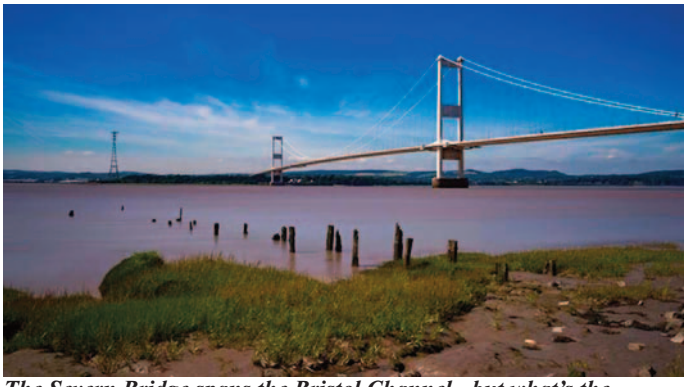
Just sign up and go!

What's on offer this Autumn and Winter?

The Geology of the British Isles
This was one of the first distance learning courses that we devised. Over the years, many people have embarked on this geological journey since then, but now, for only the second time, we're bringing it to you live!

Chris is looking forward to sharing the British Isles' journey through time in 13 hour long Zoom sessions. Each session will be brought alive through the use of YouTube videos and photographs, augmented by Chris's stories and Colin's material on Moodle. We want this to be the best course ever, aided and abetted by your own participation.

Course dates: Starts Monday November 11 - December 16 and then restarts January 13 for a further 7 weeks.
Cost: Thirteen hour-long Zoom sessions with electronic background papers £80.00 for one person or £95.00 for 2-people studying together. Printed background papers cost an additional £25.00.
Zoom sessions on Mondays at 2.00 and 7.00 pm (you choose)



The Severn Bridge spans the Bristol Channel - but what's the geological story? (Image: National Highways)

NEW! Time Traveller's Britain
Under this title we've explored more than 30 part of the British Isles and examined the work of some of our geological pioneers, but for this short course, we're bringing you six more brand new episodes in the series!

Rock & Spindle volcanic neck, St Andrews

Come with us as we explore the Mendips, Islay and Jura, the Kingdom of Fife, Snowdonia (Eryri), Shropshire and the Bristol Channel.

At the heart of each session is an hour long live Zoom presentation with electronic background material. You'll hear from Chris and Colin some of their personal reflections on the areas concerned along with the most up to date interpretations of the geology.

Course dates: Starts Thursday November 14 - December 19
Cost: Six hour-long Zoom sessions with electronic background papers £40.00 for one person or £50.00 for 2-people studying together. Printed background papers cost an additional £10.00.
Zoom sessions on Thursdays at 2.00 and 7.00 pm (you choose)

The Wednesday club...

Over the past couple of years, we've been running a series of one-off sessions covering random geological topics. These were branded as 'Wednesdays at 7'.

Whilst these have been very popular, several of you urged us to also offer the same session in the afternoon. Well, we've listened and now you can enjoy the same content in the afternoon or the evening!

November 13	Alabaster - occurrence and uses
November 20	Graptolites - a geological enigma
November 27	Potash & Polyhalite mining in the UK
December 4	Metamorphic rocks in a nutshell!
December 11	The Ediacarans - the world's first fossils?
December 18	Gemstones of the British Isles

Cost: Take all six sessions for £40.00 or book them individually for £10.00 each.
Timings: Wednesdays at 2.00 or 7.00pm - your choice.

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You can enrol via our online shop at: www.geosupplies.co.uk
or ring us on: 0114 245 5746

backyard geology

This is the place where we feature the stories that you tell us about geological happenings in your local area. Email your story to: downtoearth@geosupplies.co.uk

Major fossil find at Llandrindod Wells...

Last year we were informed of a major new fossil find near Llandrindod Wells. Sadly, this got overlooked by your Editor, but we are pleased to bring you this somewhat belated news item. It comes from Amgueddfa Cymru - Museum Wales:

Two new fossils discovered near Llandrindod Wells in mid-Wales may be the first of their kind to be found outside of North America. Amgueddfa Cymru – Museum Wales researchers found the fossils in rocks which were laid down under the sea over 460 million years ago, a time when what is now mid-Wales was covered by an ocean.

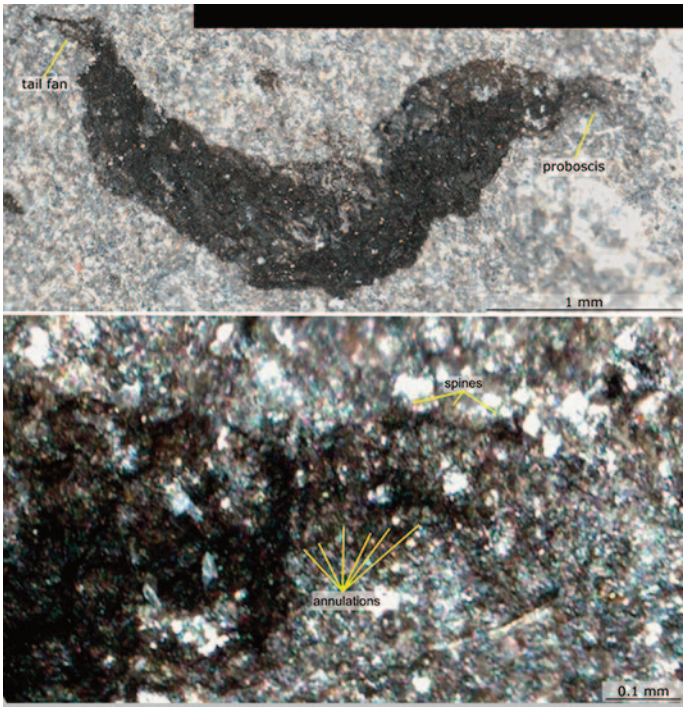
The specimens are believed to either be the first species of opabinid to be found in Europe, or to represent a distinct group of animals key to understanding the evolution of arthropods (the group of animals including crabs and insects that have exoskeletons and lots of jointed legs).

Reconstruction of the two new 'opabiniid' animals, with Mieridduryn bonniae at the front and the smaller unnamed animal at the back. (Image: Franz Anthony)

In an article published in the journal ***Nature Communications***, the two new specimens are described from a new fossil deposit recording life in the Ordovician Period, 40 million years after the Cambrian explosion (when all major groups of animals appeared in the fossil record over a geologically relatively short period of time). This deposit, located in a sheep field near Llandrindod Wells, was discovered during the COVID-19 lockdowns by independent researchers and Llandrindod residents Dr Joseph Botting and Dr Lucy Muir, Honorary Research Fellows at Amgueddfa Cymru.

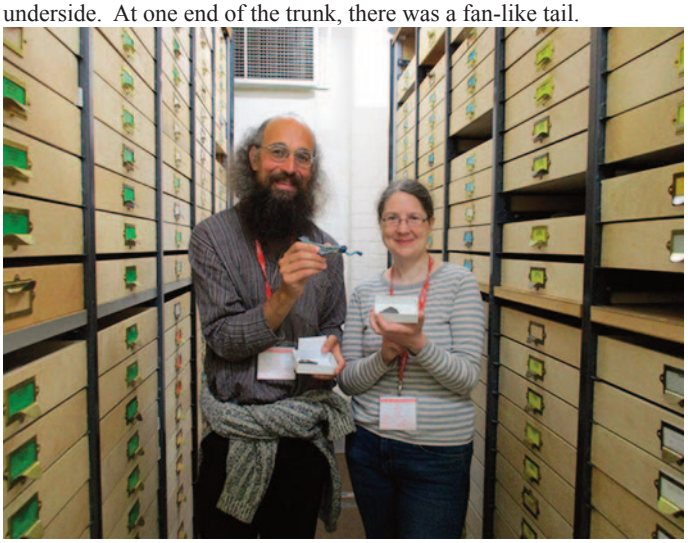
The fossils are tiny, entirely soft-bodied animals that resemble a bizarre creature called *Opabinia*, which lived in Canada over 40 million years earlier. A similar animal called *Utaurora* was described from rocks of a comparable age in the USA.

Opabiniids lived in the sea and were soft-bodied, with a long narrow trunk which had a row of flaps along each side, thought to have been



The smaller of the two new fossils, showing a tail fan and proboscis, with a close-up of its spiny proboscis on the right. (Image: Amgueddfa Cymru)

used for swimming, and pairs of stumpy triangular legs on the underside. At one end of the trunk, there was a fan-like tail.

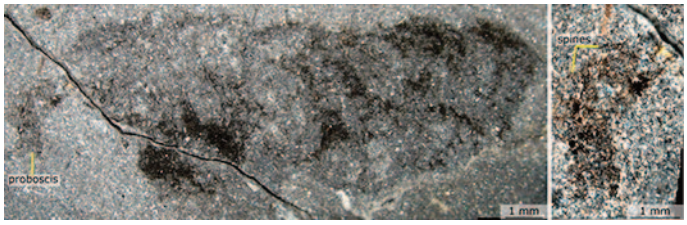


Dr Joe Botting and Dr Lucy Muir in Amgueddfa Cymru's fossil store with the new fossils and a life-size model of Opabinia. (Image: Amgueddfa Cymru)

Their most distinctive feature was at the other end - a long proboscis sticking out of the front of the head, looking a bit like the hose of a vacuum cleaner. In contrast to the Cambrian opabiniids, the proboscis

of the Welsh species bears a row of small spines. The proboscis is thought to have been flexible, perhaps used to pick up bits of food off the seabed and to move them to the mouth, which lay behind it on the underside of the head.

The larger of the two fossils is 13 mm long, including a 3 mm long proboscis. The smaller one is just 3 mm, with its proboscis making up just under a third of its total length.



Fossil of strange new 'opabiniid' animal Mieridduryn bonniae, with a close-up of its spiny proboscis on the right. (Image: Amgueddfa Cymru)

One of the new fossil animals has been given the scientific name *Mieridduryn bonniae*. (All species, living or extinct, have a scientific name made up of two parts, a genus name and a species name). The species name is after Bonnie, niece of the owners of the land where the fossil was found, in recognition of the family's support and enthusiasm for the work being carried out on the fossils. The genus name comes from the Welsh words 'mieri', meaning 'bramble', and 'duryn', meaning 'snout' or 'proboscis'. It was inspired by the small thorn-like spines that stick out along the length of the animal's proboscis.

Dr Lucy McCobb, Senior Curator (Palaeontology (Arthropods)) for Amgueddfa Cymru said:

"This is a fantastic discovery by our researchers. Joe and Lucy are working with other paleontologists from around the world to study the fossils and decipher what they can tell us about life in Wales's seas over 460 million years ago.

"Whether the Welsh fossils represent true cousins that belong in the same family as the North American creatures is uncertain, but they certainly reveal that strange 'opabiniid'- like animals lived in the seas for much longer than previously thought and had a wider geographical range. We look forward to finding out more about these Welsh wonders."

Help us to find a new home for a digital microscope...

Sue Chant was an enthusiastic amateur geologist who attended some of Chris's adult education classes in Chapeltown and a ***Down to Earth*** reader. Her husband Jonathan recently contacted with the sad news that she had died this January from multiple cancers.

He went on: "I have found some surplus equipment that I wondered if you could put to good use, possibly passing it on to one of your students? There is a digital microscope with USB lead and handbook, a small pocket magnifying glass with protective pouch, a phone microscope and lots of handy bags with a strip to write on to put rock samples in. It is all going free to a good home and I could drop it off at your shop when I am next passing."

The items are now at our shop and we are happy for them to go to anyone who can give them a good home. Given Sue's commitment to adult education we'd prefer them to go to a group where the

Sue Chant's microscope and other materials are looking for a new home.

microscope can be used by more than one person, although we will consider them going to a suitable individual.

Please contact us at:
downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746

Bridge at Brough in the Hope Valley closed whilst work takes place to repair retaining wall...

On June 17th. Derbyshire County Council (DCC) closed an important access road into the popular Hope Valley, close to the villages of Hope and Castleton. This was so that they could rebuild a retaining wall close to Brough Bridge, following storm damage in November of last year that caused a 7 metre section of the retaining wall to collapse.

The work is expected to take around three months. In the meantime, there is only very restricted access to the Hope Valley from the large village of Bradwell, with the Sheffield-Castleton bus service no longer serving the village.

Part of the collapsed retaining wall at Brough Bridge. (Image: Derbyshire County Council)

The closure of the road (the B6049) over the bridge is causing considerable local problems, particularly during the busy summer tourist season. In its most recent update (July 17th) on the work DCC said:

"We've now completely rebuilt 20 metres of the foundations for the new retaining wall, leaving a final three metres to dig out. Our focus is to steadily keep building the wall up to the height of the safety parapet. We've managed this for around 10 metres of the new wall, building to over 2 metres in height.

We have a further 10 metres of the wall built up to 1.5 metres. On this stretch, due to the rainfall, the soil beneath the road is soaking wet and the original wall is very weak. For these reasons we're being cautious and rebuilding in 3 metre sections at a time."

An aerial view of the Brough Bridge site. (Image: Derbyshire County Council)

Dinosaurs on the doorstep - in Worcester...

This Summer, if you live in the English Midlands you won't have to go far to encounter dinosaurs - to be precise, you'll only need to travel to Worcester Museum! From now until September 8th. they are hosting an exhibition entitled "Dinosaurs on the Doorstep" at Worcester City Art Gallery and Museum, Foregate Street, Worcester WR1 1DT.

Here's looking at you!

Did you know over a hundred species of dinosaurs have been found right here in the UK?

This summer, come face to face with the dinosaurs that used to roam the UK, from harmless herbivores to terrifying tyrannosaurs; from the smallest to the largest. Come and see giant dinosaur skeletons, touch real fossil bones and see stunning original fossils from 150 million years ago. Find out about the fossils from our own backyard, and the crucial role they played in the discovery of dinosaurs. See those earliest finds which gave rise to dinosaurs as we know them, all the way to the most recent and exciting dinosaur discoveries from the UK.

From teeth to tail bones, jaws and claws, food to fossilised poo, and giant skeletons, encounter real fossil bones from 100 million years ago, and find out who ate whom!

Enjoy the dinosaur discovery camp complete with shelter and campfire, a quiet space to read up on all your favourite dinosaurs and get hands-on at the Dino Activity Station.

Dinosaur's on the Doorstep is at Worcester City Museum and is open Tuesday – Saturday 10am - 4pm, Sunday 10am - 3pm and admission is free. Advance booking is not required.

There's lots to see and enjoy at GeoFest across the Abberley & Malvern Hills Geopark...

Once again the Abberley & Malvern Hills Geopark are staging their annual GeoFest programme with activities for all, the length and breadth of the geopark (including the Worcester Museum event described above).

The geopark's partner organisations are putting on an impressive range of events from now until September 1st. Amongst the locations you can visit with a geological exhibit or activity are: the Malvern Hills Geo Centre, Severn Valley Country Park, Severn Valley Railway Engine House, Arley Arboretum, Bewdley Museum, Wyre Forest Visitor Centre, National Trust Dudmaston, National Trust Croome, West Midlands Safari Park and Lapworth Museum Birmingham.

GeoFest has been kindly sponsored by Merlin Energy Resources Ltd and Oracle Environmental Experts. Many of the events are free of charge and are facilitated by volunteers from the Abberley & Malvern Hills Geopark.

To find out more about the events go to:

http://geopark.org.uk/pub/2024/02/geofest-2024/

your feedback

Tell the Editor what you think about any geological subject or article in DtoE Email: downtoearth@geosupplies.co.uk or write to him at the usual address

Dear Chris

Thank you & James Hutton

First, I want to thank you and Colin for a marvelous geological tour of Scotland. The geology and landscape are amazing, and we had pretty much perfect weather. It was a great learning experience for Pam and me and it was really fun to get to know both of you. Thank you for all of the hard work and effort you put into making the trip a success. We are so looking forward to the Cornwall trip.

Pam and I spent four days in Edinburgh after the trip and stumbled upon the grave of James Hutton in the Greyfriars Kirkyard. He is listed as a famous person buried there, but it turns out you have to pay to get into the portion where his grave is, but that was ok.

What amazed me was the relative obscurity of his burial, He is in the plot area of his wife's family (I think I remember that correctly), but except for a small, relatively new plaque placed by the University, one would not know of his presence. That seems a shame to me for the "Founder of Modern Geology". However, we were happy that we were able to visit.

Will & Pam Wilkinson, USA

Dear Chris

Thank you & congratulations

I was delighted to read in the latest ***DtoE extra*** that you have been awarded the Halstead Medal by the GA for your "work of outstanding merit"! What a crown on your work to teach and promote geology since you graduated 50 years ago.

Having come to geology rather late in life, after retirement, I enrolled on one of Down to Earth field trips to Iceland in 2010. Not knowing anything about Down to Earth at that point, I was immediately impressed by the high quality of all aspects of the course, your clear teaching and your "people skills".

You have the rare ability to almost at the same time explain things to novices as well as to seasoned members of the group. Over the next ten years I have been fortunate enough to have been able to take part in many trips and apart from the interesting geology it also brought us to the most fabulous places.

Even though I sadly can no longer come on trips, it is great to still take part in Zoom courses and so keep my interest in geology alive.

So, a heart-felt thanks from me.

Doreen von Seenus

The Editor responds: Thank you Doreen. It is indeed my pleasure to teach you and many others in the later years of your life. What people like you do is to bring a lifetime of experience from your varied careers which combine to greatly enhance the feelings of a shared learning environment. I also happen to know that you continue to do talks to your own local geological society - keep up the good work!

Dear Chris

Don't try wearing it!

I've just whizzed through the latest ***Down to Earth*** and was delighted to see that you have been awarded the Halstead Medal, which is, of course, far more important than the OBE! It is very well deserved indeed and should have happened years ago.

It's a good job it isn't designed to be worn, or you'd develop a pronounced list to port with the weight of the thing!

Peter Kennett

Dear Chris

Old mines in the Speeton Clay

About the old mines in the Speeton Clay near Filey. Trevor Brigham's suggestion that the target was dinosaur coprolites has obvious problems, as you point out. However, coprolites from other animals are possible, namely marine reptiles and fish. According to Wikipedia, there are known fossil ichthyosaurs and a range of fish in the formation. Coprolites from either will be phosphate-rich if the animals were carnivorous, due to the bone content.

However, phosphatic nodules can form on the sea floor, without the influence of animal dung. The nodules are often associated with either unconformity surfaces or periods of very slow sedimentation. This allows phosphorous to be drawn from the overlying seawater into the shallow sediment, which will be anoxic due to bacterial action.

Erosion can then concentrate nodules into lag deposits. Some of the nodules may even start as coprolites, and gain extra phosphorous this way. Either way, the nodules are concentrated along bedding planes, which the miners followed.

The mining is mentioned in this article by Mike Horne:
'The Strange and Wonderful Speeton Clay'
http://www.hullgeolsoc.co.uk/hg137.htm

Mark Wilkinson, University of Edinburgh.

Dear Chris

More on Speeton

I was interested in your article in ***DtoE extr***a on the possible use of the excavations in the cliffs at Speeton. Your speculation that it could have been for mining coprolites immediately reminded me of an article I wrote for the Journal of the Bath Geological Society in 2015, link attached. My whole article is perhaps not relevant but in it I refer to an article in ***The Field*** of March, 1953 entitled ***'Fertiliser from Fossils'***. I have been unable to find ***The Field*** article on the internet. I thought you might be interested in this little known but fascinating industry.

Charles Hiscock

https://bathgeolsoc.org.uk/journal/articles/2015/2015_Unresolved_Mystery.pdf

Author: John Cooper

Brighton & Hove Geological Society is 40 years young

Local geological societies form the very bedrock on which our subject is built. We mourn when one of them ceases and we celebrate when a new one is formed.

Many societies have been going for a number of years, so that at just 40, the Brighton & Hove Geological Society (BHGS) is a mere youngster.

John Cooper tells us all about it...

You were good enough to run an article on our 25th anniversary and I thought that you might feel kindly to mentioning in ***DtoE*** our continued existence now adding up to 40 years!

I formed the Society in 1984, 3 years after arriving at the Booth Museum in Brighton, as Keeper of Geology. Following some Adult education classes - testing the water - I set up our first meeting on 10 October 1984 when Alan Charig talked to us about dinosaurs. I hoped for 50 attendees and got 100.

A good sized audience listening to one of the speakers at a BHGS lecture in the fine meeting room.

Rory Mortimore is set to become the BHGS president

We've been healthy ever since, meeting for monthly lectures 6 or 7 times per year, plus social meetings and field trips - several hundred meetings altogether I daresay. We moved to the West Blatchington Windmill in Hove for our talks being more conducive. We also produce a quarterly Newsletter, now up to issue number 154! We survived the pandemic, like many other societies, I guess, relying on Zoom presentations

And now we are getting close to celebrating our 40th anniversary. We are not planning any grand affairs but instead have instituted a new post in our official structure and that is a Presidency. And at our AGM in March we elected as our first President Professor Rory Mortimore.

Rory has, of course, been a member throughout the years and has given more talks and led more field trips that anyone else so it seemed only right and proper that we should recognise his considerable input with this accolade which I am pleased to say he gladly accepted.

Rory will be delivering his inaugural Presidential address to us at our regular meeting on Wednesday 6 November on the subject of his (and our!) beloved Chalk, entitled Full-circle; from embryonic ideas to fully supported concepts: evolving ideas in Chalk geology.

The date is as close as we can get to the actual 40th anniversary and no doubt, like all Rory's previous talks to us, there will be a full audience. I'm hoping to be around for our 50th!

The Editor comments: I've had the pleasure of addressing the members of the BHGS at one of their meetings at their amazing windmill venue.

They are a lively bunch with members of all ages and backgrounds. At a time when some local societies are struggling it's good to hear that you are still thriving.

ask the audience

Yes, it's back, hopefully as a regular feature, but it's all down to you. We can only work on what you send us! Remember that we're here for when you see something and don't know what's going on - see below for more about how to contact us.

Please keep the questions (and answers) coming in!
Email: *downtoearth@geosupplies.co.uk*

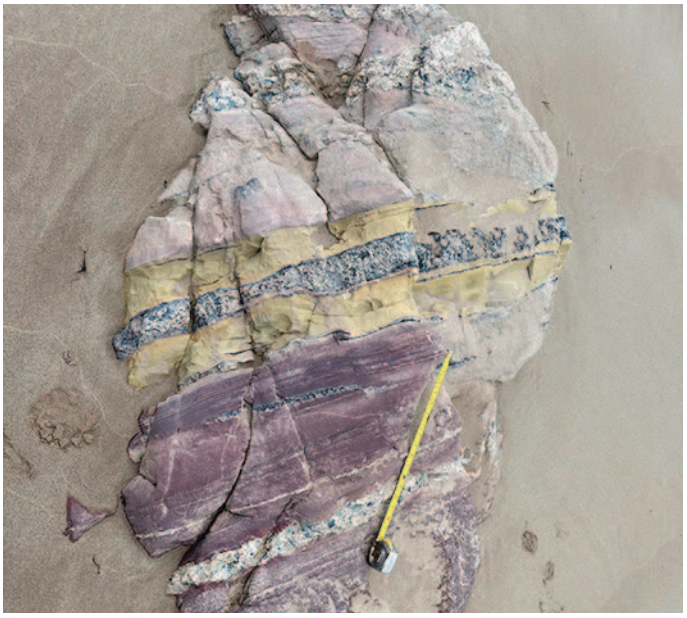
New Queries & Questions

Our first new query comes not from a geologist, but the owner of a bus company. Not any old bus company, but the most northerly on the British Isles mainland.

Neil Fuller is the owner of the Durness Bus Company and he spotted this on the North Coast just to the East of Durness. We know that it's Lewisian Gneiss and it comes from an area where there is an outcrop of part of the Moine Thrust, but can anyone add anything else?

The Editor says: I'm particularly interested in the 'green stripe' in either side of what looks rather like some sort of granitic/pegmatitic intrusion.

This kind of apple green colour is normally associated with the mineral Epidote, but this doesn't look like it to me. Any ideas?



Our second query comes from Jonathan and it's a picture of Turtle Rock in Mongolia. We wanted to share it with you because we guess that you've never seen it before and also an invitation to tell us more about it, or other named strange rocks!

Jonathan says: Thought that ***DtoE*** readers might like this picture of unusual weathering Turtle Rock, some 55 km out of Ulaan Baator. Apparently the "shell" is sandstone. There are three people on the picture for the compulsory scale.

The Editor says...

I am always pleased to hear from you, our readers, but in order to make things easier for us, please can you note the following guidance, if you want us to respond to you...

- ***Please note we are not able to offer an identification service as part of this feature.***
- ***We much prefer to hear from you by email and that includes your words and pictures.***
- ***Please only use the following email address as others can get clogged up with very different material:-***

  Email: downtoearth@geosupplies.co.uk

brainteaser

In this new brainteaser, we ask the Question...

Who, What & Where?

I don't know whether it was the fact that the subject of our quiz was a much more recent person or what, but a number of you got in touch - you were correct if you said the following:

What? ***The picture the so called sugar limestone above the Great Whin Sill***
Where? ***It's near Cow Green reservoir & Widdybank, Co. Durham***
Who? ***David Bellamy, naturalist and TV personality***

I'm pleased to report that everyone who responded, got it all correct, well done to you all. As always you had some lovely anecdotes for me, some of which I reproduce below.

Lawrence Heslop said: Below the dam wall is Cauldron Snout, a cataract made of the Whin Sill (a tholeiitic basalt) on the River Tees. The intrusion of the Whin Sill was responsible for mildly metamorphosing the Melmerby Scar limestone to form the sugar (saccharoidal texture) limestone.

Back in summer 1974 I spent a week on Widdybank Fell helping map the relict arctic-alpine flora which is very distinctive, helped by the soil the weathered sugar limestone created. David Bellamy wasn't there but a colleague Dr. Margaret Bradshaw was. She is in her 90's now and still actively involved.

Paul Thornley, picks up on Margaret Bradshaw (mentioned above): "Dr Bradshaw has recently written a book 'Teesdale's Special Flora' (at the age of 97!). In her campaign with David Bellamy over saving the flora at Cow Green, they were given the money to research the flora of the area over several years before the area was flooded. Having moved away, she then came back 50 years later to compare what survived with what had grown. She was shocked by the decline."

Hazel Ramsay tells us: David Bellamy and Brian Whitton from Durham University campaigned against the flooding of a unique landscape and assemblage of 20 important alpine plants. The Cow Green reservoir was made, but plants were moved to an area my brother who worked in the Botany department wanted to call Calf Green. They are well protected today.

It was exciting for me to find something I knew something about. I am usually totally confused.

Gill Scotchman tells us: During the summers of 1979 and 1980 I was mapping Upper Teesdale for my BSc Geology degree, at Sheffield. David Bellamy was often in the area on weekends working on conservation projects for Durham Wildlife Trust.

Weathering causes this crystalline marble to crumble and it is locally known as 'sugar' limestone. This limestone habitat supports the unique Teesdale Assemblage plants - rare Alpine/Arctic species including the Teesdale Violet, Dwarf Milkwort and Spring Gentian, the subject of ongoing plant conservation projects in Upper Teesdale originally carried out under the guidance of David Bellamy.

Thanks for triggering happy memories - I may have to go and search out my 'sugar' limestone specimens although I'm sure they will just resemble a bag of granulated sugar after all this time!

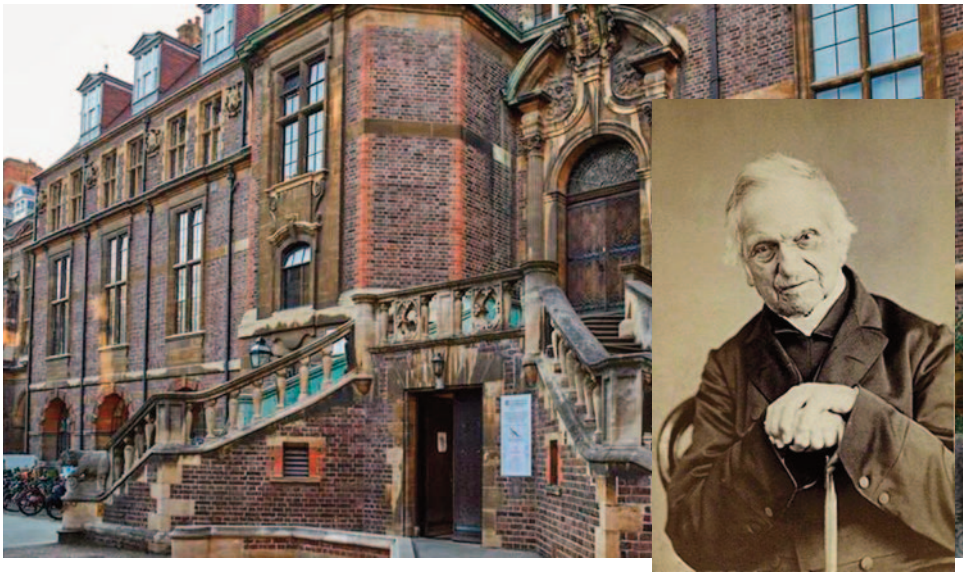
Finally S J Hepworth added: It looks like a group led by Karl Egland-Erikson. This will be the first and last time I manage to identify a site. The two on the grass need to get back on the track as they are trampling on a spring gentian area!

Our new brainteaser - it's not a competition with prizes! We'd like you to study these images and answer the Question: Who, What & Where?

We've turned the clock back with our person this time.

As always we like to hear any anecdotes that you can add.

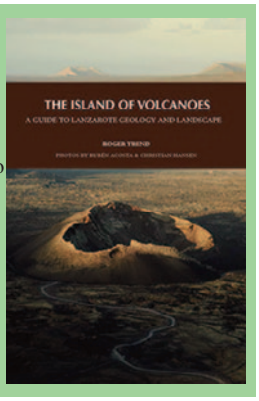
Please contact us before October 15th.



a good read

Reviewer: Chris Darmon

Book Choice



Title: The Island of Volcanoes - a guide to Lanzarote: geology & landscape
Author: Roger Trend
Publisher: Ediciones Remotas
ISBN: 978 84 127773 2 1
Format: Paperback
Cost: £24.95
Level: Adult general interest
My rating: *****

Lanzarote has been a popular island with British tourists for many years. For the geological community, it's one of the best places in the world to engage first hand with volcanoes. Until now, people have had the choice of either a fairly elderly GA Guide from 2000, or a chapter in the Terra Guide to the Canary Islands.

Now, with the publication of this book, there's a 192-page book dedicated to the geology and landscape of Lanzarote. This is a book that everyone who has either visited Lanzarote to study geology, or who is planning to do so, should read. It is best used in conjunction with one of the two guides already mentioned as well as online material produced by the Lanzarote Geopark. This isn't a site by site geological guidebook.

It takes into account recent research by the volcanologists Valentin Troll and Juan Carlos Carracedo and others. The end result is a book that is both up top date and authoritative, but also highly readable.

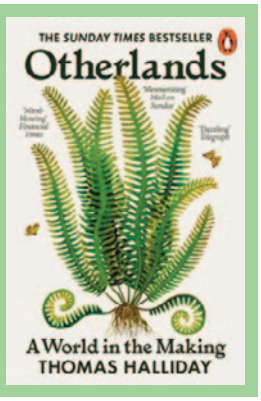
Above all this book is aimed at people who visit Lanzarote to enjoy its unique landscape where beautiful volcanoes, lava fields can be readily explored from footpaths and tracks. It tells the story of the evolution of the islands from its origins, to its foundations, volcanic rejuvenation and on to more recent historical events including Timanfaya's five phases and the 1824 volcanic event.

But Lanzarote isn't entirely a volcanic island and Roger includes a chapter on the sediments of the island, as well as another on living with volcanoes and another on volcanic hazards and how they are monitored on the island.

This book features lots of splendid photographs and many are presented as panoramas spread across two pages. Eight of these splendid panoramic views are annotated with numbered labels so that you can take in everything that you can see. This is something unique to this book and could easily be applied to other places - authors please note!

Yes, I like this book. The author has succeeded in telling Lanzarote's geological story clearly and in a way that will appeal to the geologist and non-geologist alike. Not an easy task.

Book Choice



Title: Otherlands - a world in the making
Author: Thomas Halliday
Publisher: Penguin
ISBN: 978 0 141991 14 6
Format: Softback
Cost: £10.99
Level: Adult & general interest
My rating: *****

I missed this book when it first came out in hardback, back in early 2022 but have been alerted by ***Down to Earth*** reader ***Stephen Hannath*** that is now out in paperback. Having now seen a copy, I have to say that I agree with Stephen and other reviewers.

Stephen says: "It's an amazing read" and "it's like no other book. You will not be disappointed." So with comments like this what's *"Otherlands"* all about?

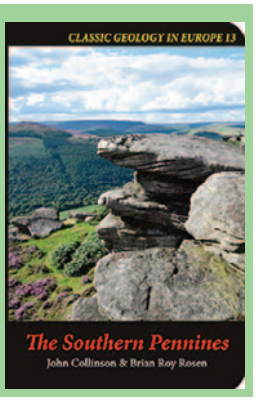
With the title *"Otherlands - a world in the making"* it will come as no surprise that this a journey through geological time of the fossil record. As such it's a subject that has been covered many times before by many different authors some of whom have done a really good job. So what's new and exciting about Thomas Halliday's approach?

First, Halliday's background is impressive, he's a palaeontologist with a PhD in palaeobiology from University College, London. He's also a writer and an international croquet player.

His approach is to take us back through geological time beginning at the Pleistocene with the thawing of the plains and ending up at the Ediacaran in an alien marine world around 600 million years ago. Now I once tried to read a book called *"The Lie of the Land"* that looked at the stratigraphic record in reverse order and, for me at least it failed because so many things in geology are a consequence of what happened before. But fossils can be imagined in reverse order.

The way Thomas Halliday does this it works and works very well. He presents sixteen vivid and amazing snapshots of our prehistoric world. He's able to charry pick the times and the places and then weaves an enthralling story. We are transported back in time to be in that place and time. His writing is as good as the best of recent science writing. You won't be able to put it down until the end!

Coming Soon



Title: The Southern Pennines
Author: John Collinson & Brian Rosen
Publisher: Liverpool University Press
ISBN: 978 1 780461 00 7
Format: Softback
Cost: tba
Level: Adult & general interest
Due: End October 2024

diary of events

lectures/zoom meetings

Please be aware that a number of clubs/societies are currently oerating with a mix of live events and Zoom meetings. Please check with the organisers what model they are working to on each occasion.

August

6 Members' finds with John Warmsley
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Shenfield)
13 An informal evening with the theme "Fossils in Flint"
Organiser: Amateur Geol. Soc. Details: www.amgeosoc.wordpress.com
15 Members' finds with Jonathan
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)
20 "The Messinian, the Med., Myotragus and Majorca" by Anthony Brook
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
21 "The geology of Islay & Jura" by Rob Crossley
Organiser: Mid-Wales Geology Club
Details: https://www.midwalesgeology.org.uk/programme/
28 "Cave Oolite, bog iron and pantiles, geologic products from the Wolds" by John Connor (Zoom)
Organiser: Hull Geol. Soc. Details: http://www.hullgeolsoc.co.uk/

September

2 "Construction in Jurassic-aged mudstones for the HS2 Railway" by Kevin Briggs
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
5 "An introduction to the geology of Somerset" by Mark Eller
Organiser: Mole Valley Geol. Soc. Details: www.mvgs.org.uk
5 "The geology of Hogwarts" by Leanne Hughes
Organiser: Bath Geol. Soc. Details: https://bathgeolsoc.org.uk/lectures/
6 "The search for life on Mars - a geological perspective" by Connor Ballard
Organiser: Farnham Geol. Soc. Details: www.farnhamgeosoc.org.uk/meetings/
9 "Stratigraphy and sedimentology of Northern European chalks" by Haydon Bailey
Organiser: Cambs. Geol. Soc. Details: http://www.cambsgeology.org/events\
10 "Economic geology and the environment" by Stephen Krause
Organiser: Amateur Geol. Soc. Details: www.amgeosoc.wordpress.com
11 "Glacial geology in and around Shrewsbury" by Peter Worsley
Organiser: Shropshire Geol. Soc. Details: www.shropshiregeology.org,uk
11 "Geoscience communication and protected sites" by Saskia Elliott
Organiser: Harrow & Hillingdon GS. Details: https://www.hhgs.org.uk/
12 "Long-term climate stability and biogeochemical feedbacks operating on exoplanets orbiting M-dwarf stars" by Andrew Rushby
Organiser: Hertfordshire Geol. Soc. Details: ttps://www.hertsgeolsoc.org.uk/
17 "The geology of the Great Pyramid" by Geoff Downer
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
18 "A geology trip across two Scottish Terranes" by Chris Simpson
Organiser: Mid-Wales Geology Club
Details: https://www.midwalesgeology.org.uk/programme/
19 "Properties of sand" by Ian & Ros Mercer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)
20 "The valley of the Western Rother: soil, erosion and river management" by John Boardman
Organiser: West Sussex Geol. Soc. Details: http://www.wsgs.org
21/22 "The impact of geology on Northern England" - a celebration of the Bicentenary of William Smith
Organiser: Yorkshire Geological Society
Details: https://www.yorksgeolsoc.org.uk/events

October

1 "The stones used in Decorative Stone Inlay or Pietre Doré" by Ruth Siddall
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Shenfield)
3 "The geology of the Albert Memorial" by John Cosgrove
Organiser: Hertfordshire Geol. Soc. Details: ttps://www.hertsgeolsoc.org.uk/
3 "Charles Moore, Bath geologist (1814-1881) by Chris Duffin
Organiser: Bath Geol. Soc. Details: https://bathgeolsoc.org.uk/lectures/
4 "The geology of the Woodsmith Mine, N Yorkshire" by Lisa Gillespie
Organiser: Geologists' Association (Hydrid Zoom/lecture)
Details: https://geologistsassociation.org.uk/lectures/
6 "Hot house to ice house" by Mike Howgate
Organiser: Amateur Geol. Soc. Details: www.amgeosoc.wordpress.com
7 "A hot topic! The geology supporting geothermal energy" by Duncan Macgregor
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
9 "The greywacke" by Nick Davidson
Organiser: Shropshire Geol. Soc. Details: www.shropshiregeology.org,uk
10 AGM & Soirée
Organiser: Mole Valley Geol. Soc. Details: www.mvgs.org.uk
10 "Here be sea monsters: new perspectives on fossil marine reptiles" by Rebecca Bennion
Organiser: Leeds GA Group. Details: https://leedsga.org.uk/events/
14 "Iguanodons" by Fanziska Norman
Organiser: Cambs. Geol. Soc. Details: http://www.cambsgeology.org/events
15 "The Permian-Triassic conodonts and the end-Permian mass extinction" by Lina Wang Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
16 "Walking with trilobites" by Roy McGurn Organiser: Mid-Wales Geology Club Details: https://www.midwalesgeology.org.uk/programme/
18 "Tracking environmental changes on the Isle of Wight over the past 13,000 years" by Eve Horsfall
Organiser: West Sussex Geol. Soc. Details: http://www.wsgs.org

November

5 "The journey of volcanic crystals; the time lords of eruptive history" by Chiara Petrone
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Shenfield)
6 "Adventures in Martian deep time" by Sanjeev Gupta
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
7 "Monitoring community exposures to volcanic emissions in Montserrat" by Rosie Lewis
Organiser: Leeds GA Group. Details: https://leedsga.org.uk/events/
9 "Charnwood Precambrian fossils" by Frankie Dunn
Organiser: East Midlands Geol. Soc. Details: emgs.org.uk
11 "The oldest fossilised trees ever found" by William McMahon
Organiser: Cambs. Geol. Soc. Details: http://www.cambsgeology.org/events
12 "Mineralogy and radioactive waste" by Claire Corkhill (Zoom)
Organiser: Amateur Geol. Soc. Details: www.amgeosoc.wordpress.com
13 "The wonderous variety that are mudstones" by Kevin Taylor
Organiser: Shropshire Geol. Soc. Details: www.shropshiregeology.org,uk
14 "Critical raw materials for the energy transition" by Kathryn Goodenough
Organiser: Hertfordshire Geol. Soc. Details: ttps://www.hertsgeolsoc.org.uk/
14 "What asteroid Ryugu tells us about ice and water in the early solar system" by Matt Genge
Organiser: Mole Valley Geol. Soc. Details: www.mvgs.org.uk
15 Members' show and tell
Organiser: West Sussex Geol. Soc. Details: http://www.wsgs.org
19 "Salt of the Earth and salt of the sea" by Ann Barrett
Kent Geologists' Group Details: www.kgg.org.uk/
21 "Identifying rocks" with Ian & Ros Mercer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)

December

2 "Scotland's greatest ice age" by Ian Fairchild
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
5 "Fossil and mineral fakes and forgeries" by Ian Dunne
Organiser: Bath Geol. Soc. Details: https://bathgeolsoc.org.uk/lectures/
6. "Geological considerations of landfill design" by Ewan Thomas
Organiser: Geologists' Association (Hydrid Zoom/lecture)
Details: https://geologistsassociation.org.uk/lectures/
9 "The geodiversity of landscapes of Cambridgeshire" by Steve Boreham
Organiser: Cambs. Geol. Soc. Details: http://www.cambsgeology.org/events
10 "The Thames through time, the history of an ice age river" by Ian Mercer
Organiser: Amateur Geol. Soc. Details: www.amgeosoc.wordpress.com
11 "Sir Arthur Russell and his mineral collection" by Roy Starkey
Organiser: Shropshire Geol. Soc. Details: www.shropshiregeology.org,uk
12 "The Rutland ichthyosaur: digging up a dragon" by Emma Nicholls
Organiser: Hertfordshire Geol. Soc. Details: ttps://www.hertsgeolsoc.org.uk/

day field trips & visits

Please ensure that you contact the organisers in advance of any field trip advertised. Please don't just turn up, it may be for members only

August
4 Field visit to Scunthorpe ironstone quarry with Paul Hildreth
Organiser: Hull Geol. Soc. Details: http://www.Huddleston.co.uk/
5 Ramble with Sarah Cooke & Mike Jones
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
10 Building stones of Central Manchester with Brian Jeffrey & Peter del Strother Organiser: Manchester GA
Details: http://www.mangeolassoc.org.uk/outdoorevents.php
10 Field visit to Warton Sands & Trowbarrow with Duncan Woodcock Warton
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
11 Field visit to Bradgate Park Charnwood Forest with John Carney
Organiser: East Midlands Geol. Soc. Details: www.emgs.org.uk
14 Fieldwork for beginners at Mungrisdale with Fi Harwood
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
14 Walking the Geotrail of Harrow Weald Common
Organiser: Harrow & Hillingdon GS. Details: https://www.hhgs.org.uk/
14 Ingleton waterfalls walk with Dave Hasleden
Organiser: Westmorland GA
Details: https://www.westmorlandgeolsoc.co.uk/summerfieldtrips
17 Field visit to Severn Valley Country Park with Andy Harrison
Organiser: Black Country Geol. Soc. Details: honsec@bcgs.info18 Visit to Saffron Walden Museum & building stone walk with Gerald Lucy
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/
18 Summer geological event at Holly House
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
18 Field visit to Nuneaton area with Mike Allen
Organiser: Warwickshire Gecons. Group Details: https://www.wgcg.co.uk/
22 & 23 Field visit to Robin Hood's Bay and Burniston with Andy Howard
Organiser: East Midlands Geol. Soc. Details: emgs.org.uk

September
14 Field visit to Grassington with Bob Appleyard
Organiser: Huddersfield Geology Group
Details: https://www.huddersfieldgeology.org.uk/field-trips/
16 Field visit to the Langdale Caldera margin with David Haselden
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
19 Field visit to Alport Mining Field with Tony Ward
Organiser: East Midlands Geol. Soc. Details: www.emgs.org.uk
(Joint with North Staffs. GA Group)
21 Field visit to Hill Farm, Gestingthorpe with Jonathan Spencer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/
21 Field visit to Alport Mining Field, Peak District with Tony Ward
Organiser: East Midlands Geol. Soc. Details: emgs.org.uk
28 Field visit to the Northumberland-Solway Basin with Steve Rozario
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/

October
5 Field visit to Highwood Quarry, Dunmow with John Walmsley
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)
13 Barton on Sea, Hampshire with Jim House
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
13 Field visit to Stedden Clough with Bob Appleyard
Organiser: Huddersfield Geology Group
Details: https://www.huddersfieldgeology.org.uk/field-trips/

residential field trips

September
13-15 West Somerset with David Green
Organiser: Mole Valley Geol. Soc. Details: www.mvgs.org.uk
13-16 The Lleyn Peninsula with Rob Crossley Organiser: Mid-Wales Geology Club Details: https://www.midwalesgeology.org.uk/programme/

October
4-14 The Fort William area with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
9-13 Anglesey with Robert Crossley
Organiser: Hertfordshire Geol. Soc. Details: ttps://www.hertsgeolsoc.org.uk/
21-26 The Yorkshire Dales with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

November
20-29 Morocco, mountains, desert, fossils & more
Organiser: Geologists' Association
Details: https://geologistsassociation.org.uk/overseasfield/

2025 March
30-April 6 The Isle of Arran with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

June
1-6 Scarborough on the Yorkshire Coast with Chris Darmon
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
11-18 Isle of Mull & Ardnamurchan with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
Mid-June Glamorgan Coast with John Nudds
Organiser: Farnham Geol. Soc. Details: wessa2006@hotmail.co.uk
25-30 The Western Lake District with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

July
9-16 Heart of Wales with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

August
9-16 Peak District Summer School with Chris Darmon & the team
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

September
1-11 Iceland: the North & East Fjords with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

October
8-15 Torbay & South Devon with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

fairs, shows & special events

August
Until September 2 "Dinosaurs on the Doorstep" a free exhibition at Worcester Museum & Art Gallery. For further details phone: 01905 25371
10 Geology Day at the Noveum Museum
Organiser: West Sussex Geol. Soc. Details: http://www.wsgs.org
24 Rock & Fossil Roadshow at Hornsea Museum
Organiser: Hull Geol. Soc. Details: http://www.hullgeolsoc.co.uk/

September
8 "The birth, life & death of the River Mole". A talk, followed by a local field trip in Dorking to celebrate Heritage Open Day,
Organiser: Mole Valley Geol. Soc. Details: www.mvgs.org.uk
27-29 Geologists' Association, Annual Conference *"Bristol's Diverse Geology"*. Organiser: Geologists' Association
Details: https://geologistsassociation.org.uk/lectures/

October
12 EMGS 60th Anniversary Conference
A feast of top quality lectures covering local and topical issues. To be held at BGS Keyworth Organiser: East Midlands Geol. Soc. Details: emgs.org.uk

November
2/3 Festival of Geology at UCL in London. The Festival takes place on November 2 with field visits on November 3
Organiser: Geologists' Association
Details: https://geologistsassociation.org.uk/lectures/

pygidium

Our regular little 'tail-pieces' of information some serious, others light. If you've found something - share it with us all.

South Wales gives us some nice Pygidium material...

We've recently run a trip to Porthcawl in South Wales and, aside from some super geology, we also managed to spot a couple of nice little things for this ***Pygidium***.

We begin with this geologically named security company which was on display beside Barry Town railway station. Clearly this is a company with a very long pedigree!

Just one observation though, wouldn't it have been more appropriate if the company logo was a suitable trilobite!

Next, we moved on to Mumbles Bay, Swansea where we spotted this second hand car advertisement. It says something that after all these years there are still references to ***"Only Fools and Horses"*** and Mr Trotter's Reliant!

As an observation, the only thing older than Trotter's Reliant was the near vertical strata in the cliff behind! It's good to see that good old fashioned advertising is still alive and well in South Wales.

Time for a 'pointless' piece of granite...

Down to Earth reader ***Ray Newto***n and I have at least one thing in common we are viewers of the BBC1 quiz show ***Pointless***. This goes out daily unless Wimbledon or European Football is on, at 5.15.

In the last issue we told you about it, but we did not have a picture for you to see. Now thanks to Ray we have. As you can see, it's not at all like a typical granite, but what can it be?

Chris Rogers comes up with another good one...

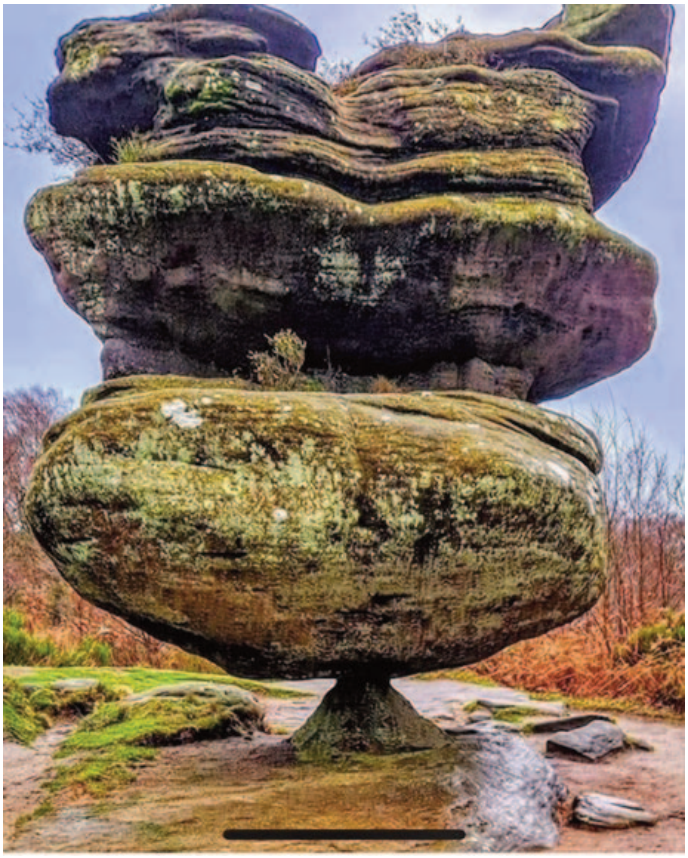
Down to Earth reader Chris Rogers from Chesterfield is one of the people who used to enjoy attending face to face classes which we now sadly no longer run. However he keeps his geological hand in by trawling the internet and sending me some excellent little snippets that I include in the magazine from time to time.

Hover this time he is recounting something he found himself in the field recently. He says:

The Balancing Rock, otherwise known as Druid's Idol is located within the stunning Brimham Rocks near Harrogate, in North Yorkshire.

It formed naturally over millions of years and is one of the many formations at the site. They are just incredible, not least this one, which seems to defy all logic and science. However, having visited and sat under it, I can assure that this is a genuine photo of a genuine rock formation, taken during my visit last December. Folklore about the site is rife of course.

'In the 18th and 19th centuries, antiquarians such as Hayman Rooke wondered whether they could have been at least partly carved by druids, an idea that ran concurrently with the popularity of James Macpherson's Fragments of Ancient Poetry of 1760, and a developing interest in New-Druidism.



For up to two hundred years, some stones have carried fanciful names, such as Druid's Idol'.

Another good selling point...

Last year we went to Guernsey and whilst we were there we spotted that a local quarry company Ronez was selling bags of aggregate with the strapline "part of the island's foundations."

Now another ***Down to Earth*** reader (sorry I don't know who) has informed me of this one, on a bag of Lewisian Gneiss aggregate from North Uist. Now this is a proud boast - unless, of course anyone can do better!

Essence of mammoth, a modern slant on an ancient tusk (or two)...

We recently received this snippet from Down to Earth reader and Essex Rock & Mineral Society leader Ros Mercer down in Essex:

"See attached a photo of our 'Essence of Mammoth" with its stainless steel tusks that is due to be installed at our local housing development that used to be a Thame Gravel quarry when it is installed later this year. Unfortunately the work has been delayed as the ground conditions are so wet. Here are the tusks in the making."

The Editor comments: It's good to see that geology and art can meet in this way. It's especially good that it commemorates a former gravel quarry where, no doubt, real tusks were once found.

And finally...

Show caves are great places to have some unusual events. Years ago, I remember organising an underground hot dinner for about 25 people down the Blue John mine at Castleton in Derbyshire. The new owners of Kent's Cavern in Torquay are reviving an underground Cave Cinema for the Summer holidays this year.

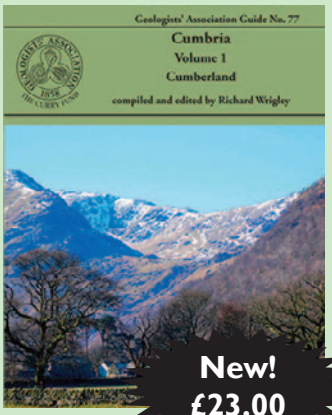
This is what they say:

"Our pop-up underground cinema offers a unique experience like no other! Sit back, relax, and watch a movie in a deckchair in Britain's Oldest Home! It's been home to Neanderthals and Ice Age animals including woolly mammoths, bears & lions. You'll be immersed in this incredible environment as you're entertained."

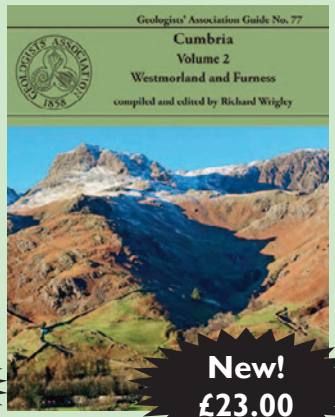
For further information go to:
https://www.kents-cavern.co.uk/events/category/cave-cinema

GEO Featured books August to October

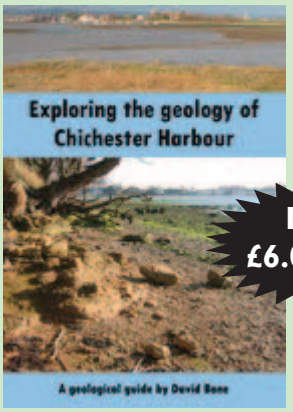
In each issue we are pleased to be able to introduce you to a range of featured books. Where they are being offered at reduced prices, these will be current to the end of October 2024 provided that stocks are available. Please note, all prices include UK postage.

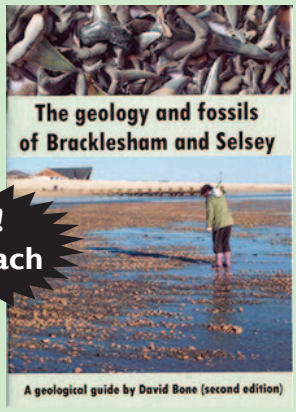


New! £23.00



New! £23.00

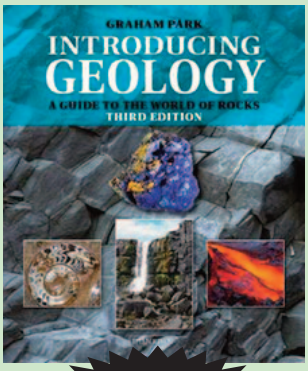




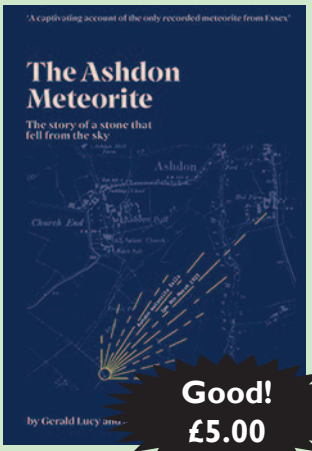
New! £6.00 each

Buy both of the above for £10.00

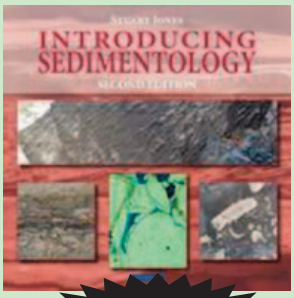
New! £10.00



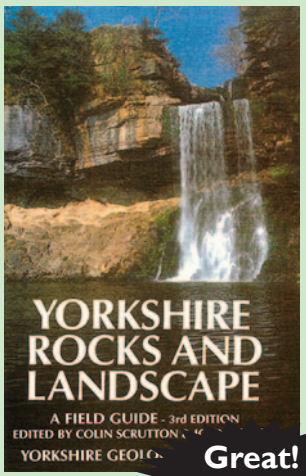
New Ed! £11.00



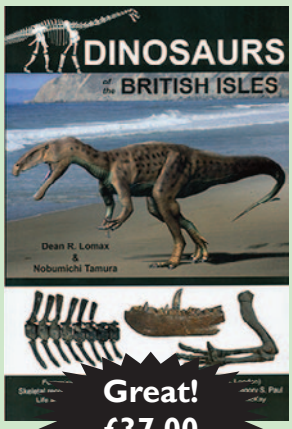
Good! £5.00



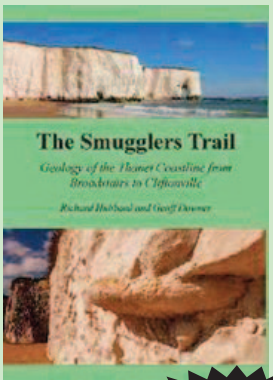
New Ed. £16.00



Great! £11.95



Great! £37.00



Good! £12.00

Superb! £30.00

Order online at www.geosupplies.co.uk or ring us on 0114 245 5746
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